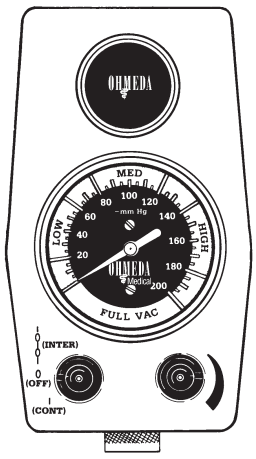
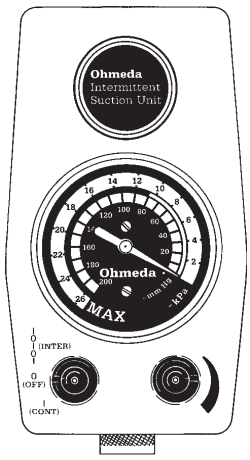
Ohio Medical Corporation™

Intermittent Suction Units (ISU)
Service Manual



North American
ISU



International
ISU

User Responsibility

This Product will perform in conformity with the description thereof contained in this manual and accompanying labels and/or inserts, when assembled, operated, maintained and repaired in accordance with the instructions provided. This Product must be checked periodically. A malfunctioning Product should not be used. Parts that are broken, missing, plainly worn, destroyed or contaminated, should be replaced immediately. Should such repair or replacement become necessary, Ohio Medical recommends that a telephonic or written request for service advice be made to the nearest Ohio Medical Service Office. This Product or any of its parts should not be repaired other than in accordance with written instructions provided by Ohio Medical, or altered without the prior written approval of Ohio Medical's Safety Department. The user of this Product shall have the sole responsibility for any malfunction which results from improper use, faulty maintenance, improper repair, damage, or alterations by anyone other than Ohio Medical.

Important: Federal law in the U.S.A. and Canada restricts this device to sale by or on the order of a licensed medical practitioner. This device is to be used only by persons who have been adeuately instructed in its use.

Important: This document is not to be reproduced in any manner, nor are the contents herein to be disclosed to anyone without the express authorization of Ohio Medical Corporation, Gurnee, IL USA.

Technical Competence

The procedures described in this service manual should be performed by trained and authorized personnel only. Maintenance should only be undertaken by competent individuals who have a general knowledge of and experience with devices of this nature. No repairs should ever be undertaken or attempted by anyone not having such qualifications.

Genuine replacement parts manufactured or sold by Ohio Medical must be used for all repairs.

Read completely through each step in every procedure before starting the procedure; any exceptions may result in a failure to properly and safely complete the attempted procedure.

Abbreviations Used In This Manual

in Hg	Inches of mercury
in	Inch
ISU	Intermittent Suction Unit
kPa	Kilo pascals (kPa x 7.50 = mm Hg)
LPM	Liters per minute
mm Hg	Millimeters of mercury (mm Hg x .133 = kPa)
mm	Millimeters
oz	Ounces
| (CONT)	Continuous (On)
|O|O| (INTER)	Intermittent
O (OFF)	Off
P-P	Posi-Pulse
°C	Degrees Celsius
°F	Degrees Fahrenheit
N-m	Newton-Meter (N-m x .737 = ft-lb)
ft-lb	Foot-Pound Force (ft-lb x 1.356 = N-m)
DISS	Diameter Index Safety System
OES	Oxequip Suction
NCG	National Compressed Gases (Chemetron)
BOC	British Oxygen Corporation
NPT	National Pipe Thread (USA)
NPTF	National Pipe Thread Female (USA)
MPTS	Multi-Purpose Therapy Stand
I.D.	Inner Diameter
gal.	gallon
PTFE	Teflon®
NG	Naso - Gastric

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Notes

1/Precautions

1.1 Definitions

Note: A Note provides additional information to clarify a point in the text.

Important: An Important statement is similar to a note but of greater emphasis.

⚠**CAUTION**: A CAUTION statement is used when the possibility of damage to the equipment exists.

⚠**WARNING: A WARNING statement is used when the possibility of injury to the patient or the operator exists.**

1.2 Warnings

The Pre-Use Checkout Procedure must be performed before using this equipment on each patient. If the regulator fails any part of the Pre-Use Checkout Procedure, it must be removed from service and repaired by qualified service personnel.

Connect the Vacuum Regulator to the vacuum source only. Connection to pressure sources even momentarily could injure the patient or operator and damage the equipment.

Always connect the regulator to the vacuum source and check its operation before attaching the patient connection.

The fitting port of the regulator must be occluded when setting the prescribed suction level. This prevents the patient from receiving higher than required suction levels.

Do not use this device in the presence of flammable anesthetics. Static charges may not dissipate and possible explosion hazard exists in the presence of these agents.

After patient use, regulators may be contaminated. Handle in accordance with your hospital's infection control policy.

Clean and sterilize all multiple use suction equipment before shipment to ensure transportation personnel and/or service personnel are not exposed to any hazardous contamination.

Clean and sterilize all multiple use suction equipment if contaminated before disassembly, to ensure service personnel are not exposed to hazardous contamination.

Following sterilization with ethylene oxide, parts should be quarantined in a well ventilated area to allow dissipation of residual ethylene oxide gas absorbed by the material. Aerate parts for 8 hours at 130°F (54°C).

If the Vacuum Regulator is repaired or disassembled in any manner, the Service Checkout Procedure must be performed before using the equipment on the patient.

The Posi-Pulse ISU must be mounted vertically for proper operation. The regulator may not operate correctly in any other position.

For proper Posi-Pulse operation, the Posi-Pulse ISU's "On" and "Off" timing cycles must be a minimum of 10 seconds.

If the flow control valve is rotated fully clockwise, the ISU and Posi-Pulse ISU will not cycle in the intermittent mode. Drainage will cease.

When using the Posi-Pulse ISU with a Posi-Pulse Device, avoid using suction over 200 mm Hg/26 kPa or Posi-Pulse operation may not allow effective drainage.

It may be possible to set the vacuum limit to zero. If there is no suction present, rotate set screw counterclockwise and/or check Chapter 6/Troubleshooting.

If the screws on the timing valves are turned all the way clockwise, the ISU and Posi-Pulse ISU will not cycle.

1.3 Cautions

A supply vacuum of less than 15 in Hg/51 kPa (380 mm Hg) may impair Posi-Pulse ISU and Posi-Pulse Device operation.

Cleaning the gauge may result in damage.

Do not lubricate any internal components of the regulator module.

Do not over-tighten the timing valve stem. Needle portion of the valve may be damaged.

Do not steam autoclave or liquid sterilize the ISU or Posi-Pulse ISU. Severe impairment to the operation of the regulator will result. The only acceptable method of sterilization is with gas (ethylene oxide).

Do not use any [1]Loctite® products to seal the fitting and adapter port threads (or products which contain Methacrylate Ester as an active ingredient).

Only competent individuals trained in the repair of this equipment should attempt to service it.

Sterilization with ethylene oxide mixtures may cause crazing (minute superficial cracking) of some plastic parts. Crazing will be more pronounced when mixtures containing [2]Freon® are used.

The cap screws can strip the regulator module housing threads if they are screwed in too tight.

The gauge assembly must be handled with utmost care to retain its precision. If the lens is removed, do not rest the gauge on its face.

To help prevent aspirate from entering the regulator, as a result of misuse, an Overflow Safety Trap and suction filter, should be attached prior to its use. Aspirate in the regulator will impair the operation. The use of the Overflow Safety Trap and suction filter will help prevent this and extend the life of the suction equipment.

To prevent stripping the plastic threads, place the screw in the hole and turn counterclockwise until it drops into the original threads. Tighten screw.

Use of lubricants other than recommended, may degrade plastic or rubber components.

Not for Field or Transport Use**

[1] Loctite is the registered trademark of the Loctite Corporation.

[2] Freon is the registered trademark of the DuPont Co.

**The categories of Field and Transport Use are specifically defined in ISO 10079-3 (BS 7259: Part 2). "Field" means use at accidents or emergencies outside a hospital. "Transport" means use in ambulances, cares and airplanes. These situations may expose the equipment to uneven support, water, dirt, mechanical shock and temperature extremes. Ohio Medical suction equipment has not been tested to

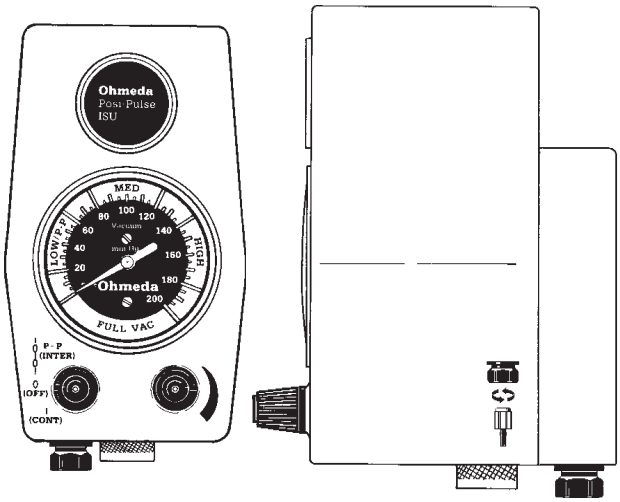
2/Scope

This service manual contains service, maintenance and parts information on four models of the ISU and four models of the Posi-Pulse ISU.

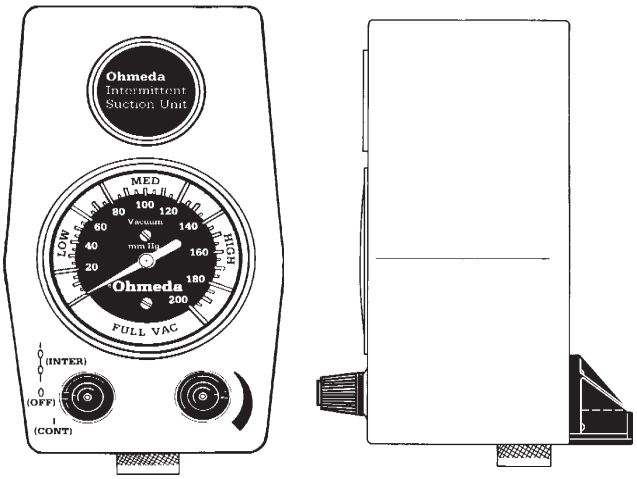
North American (2)
English (2)
French (2)
Spanish (2)

2.1 North American Vacuum Regulators

Note: Part numbers given are for Vacuum Regulators without fittings or adapters.



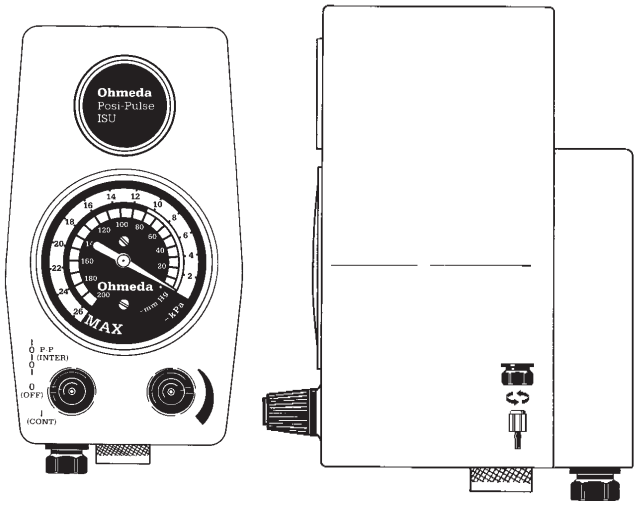
Posi-Pulse ISU
6700-1252-900



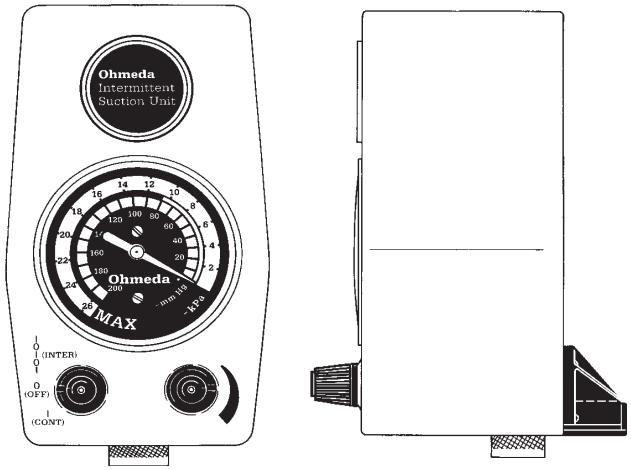
ISU
6700-1251-900

2.2 English Vacuum Regulators

Note: Part numbers given are for Vacuum Regulators without fittings or adapters.



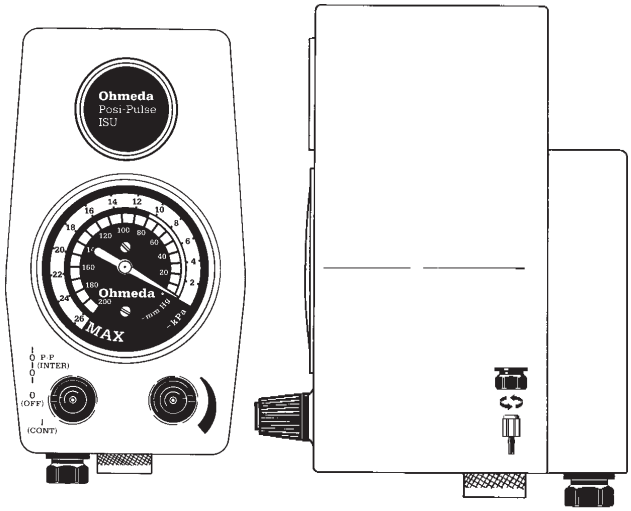
Posi-Pulse ISU
6700-1256-900



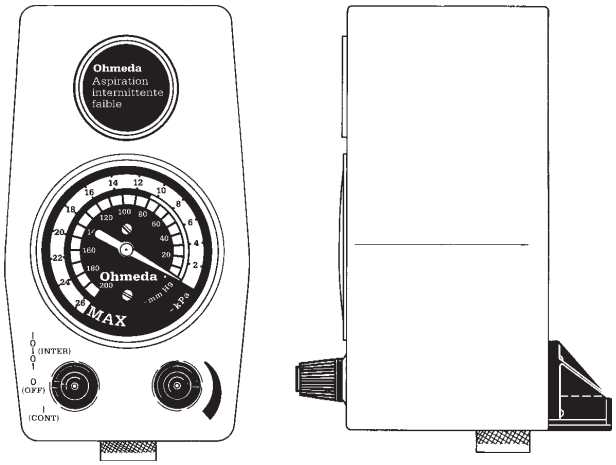
ISU
6700-1253-900

2.3 French Vacuum Regulators

Note: Part numbers given are for Vacuum Regulators without fittings or adapters.



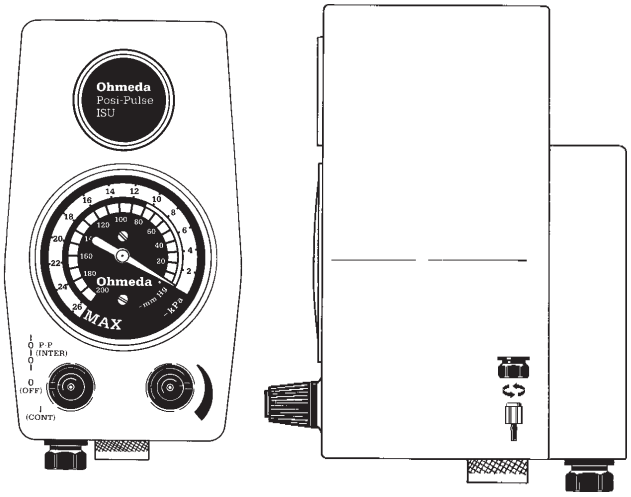
Posi-Pulse ISU
6700-1257-900



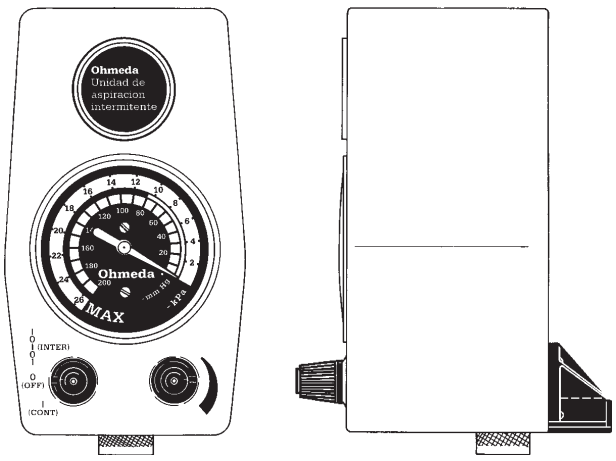
ISU
6700-1254-900

2.4 Spanish Vacuum Regulators

Note: Part numbers given are for Vacuum Regulators without fittings or adapters.



Posi-Pulse ISU
6700-1258-900



ISU
6700-1255-900

3/Description and Specifications

3.1 Description

⚠**WARNING: Do not use this device in the presence of flammable anesthetics. Static charges may not dissipate and possible explosion hazard exists in the presence of these agents**.

The Intermittent Suction Unit (ISU) and Posi-Pulse Intermittent Suction Unit (Posi-Pulse ISU) are dual purpose Vacuum Regulators which provide either intermittent or continuous suction. They can be used for N.G. (intermittent) or pharyngeal/tracheal (continuous) suctioning throughout the hospital.

On the Pediatric ISU, the maximum vacuum limit is factory present to 135 mm Hg and the limit may be adjusted between 80 and 150 mm Hg. It also has a positive pressure relief. The low gauge and the baby icon on the cover distinguish it from the standard ISU.

Each unit contains a regulator module to regulate and adjust suction, a vacuum gauge which indicates suction supplied, a patented Unilogic Module to silently and reliably switch suction on and off, and timing valves which select and adjust the length of the on and off cycles.

The Posi-Pulse ISU also contains a pause module and Posi-Pulse attachment port. It can be used with or without a disposable Posi-Pulse Drainage Assist Device®.

In use, the vacuum source is connected through the regulator module which functions as an automatic valve. Rotating the suction control knob adjusts the position of the regulator module and selects a predetermined level of suction.

During use, as the flow requirement increases, the valve automatically opens to maintain suction at the preset level. Conversely, when the flow requirement decreases, the valve automatically closes to maintain suction at the preset level. The same mechanism compensates for changes in supply vacuum to automatically maintain the pre-set suction level.

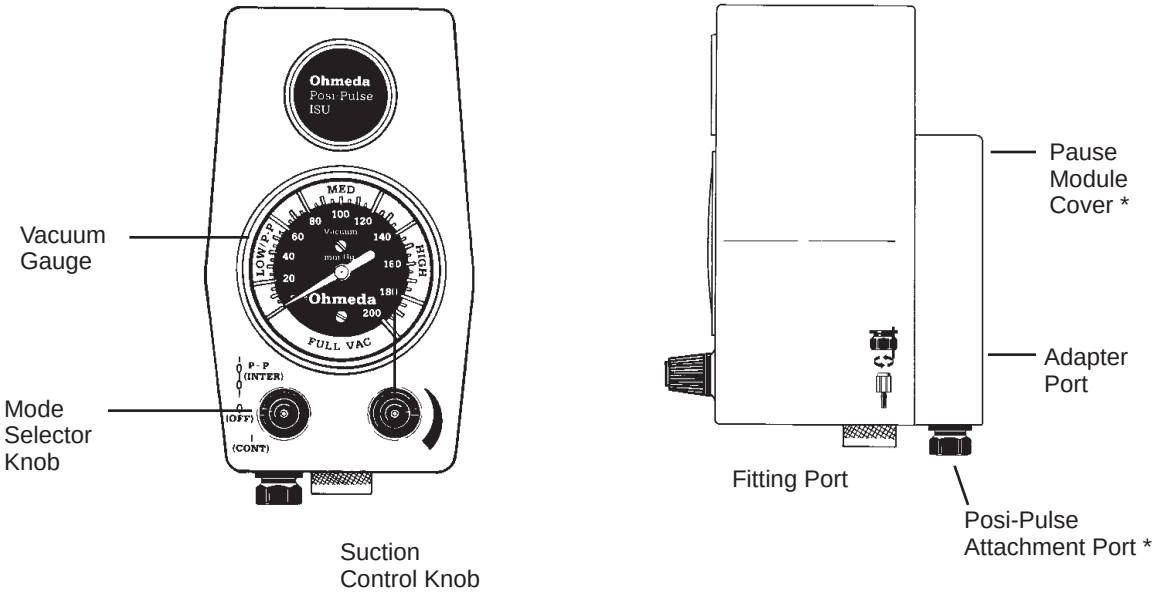
Note: Posi-Pulse Drainage Assist Device® is a registered trademark of The BOC Group, Inc.

1. Suction Control Knob - Allows easy adjustment of suction to the patient.
2. Mode Selector Knob - Allows quick and easy mode changes.

   Note: In the text of this manual, the international graphic symbol for the intermittent mode normally written as:

   |
O
|
O
|

   will be written as |O|O|.



* Note: Posi-Pulse ISU ONLY.

Front and Side View

a. IOIOI (INTER) or IOIOI P-P (INTER) - Suction is intermittent (cycles on and off) and the suction level can be adjusted with the suction control knob. This is the selection used for Posi-Pulse N.G. Drainage System operation.

   When used as an Intermittent Suction Unit, both the “On” and “Off” timing cycles are independently adjustable within a range of 3 to 30 seconds. These are pre-set at the factory at a supply vacuum of 450 mm Hg/60 kPa to provide approximately 15 seconds “On” and 8 seconds “Off” for the ISU and 15 seconds “On” and 15 seconds “Off” for the Posi-Pulse ISU. If the supply vacuum is different, the timing cycles will vary. Adjustment procedures are outlined in the Operations Section of this manual under the heading “Setting the Timing Cycles”.

b. O (OFF) - No suction is supplied to the patient.

c. I (CONT) - Suction is continuous and can be adjusted with the suction control knob.

3. Vacuum Gauge - The suction level to the patient is displayed during use.

3.2 Specifications

Gauge:	Accuracy: ±5% of full scale deflection
Flow Rates:	| (CONT) Mode - 0 - 80 LPM without fittings at full increase setting depending on supply vacuum and open air flow
suction	|O|O| (INTER)/|O|O| P-P (INTER) Mode - 8 LPM with the control knob set to 120 mm Hg/16 kPa
Regulated Suction Range:	0 to 200 mm Hg/0 to 26 kPa Pediatric ISU: 0 to 150 mmHg/0 to 20 kPa
Pre-Set Timing Cycles: (Intermittent Mode ONLY) **Note:** The Pre-set timing cycles are set at a supply vacuum of 450 mm Hg/60 kPa.	ISU On time cycle-15 seconds ± 3 seconds Off time cycle-8 seconds ± 3 seconds Posi-Pulse ISU On time cycle-15 seconds ± 3 seconds Off time cycle-15 seconds ± 3 seconds
Posi-Pulse Signal Line Pause:	6 seconds ± 4 seconds from the start of the OFF time cycle
Weight: (Less Fittings)	ISU - 28 oz/794 grams Posi-Pulse ISU - 31 oz/879 grams Pediatric ISU: 28 oz/794 grams
Dimensions: (Less Fittings)	Height: 6.6 inches/168 mm Width: 3.5 inches/89 mm Depth: 4.8 inches/121 mm
Latex tubing, 0.25 in (6.4 mm) I.D. X 12 in (30 cm) supplied:	0 to full vacuum Flow dependent on source and setup
Disposable tubing (Available separately in some markets; 6 mm I.D. X 450 mm, 750 mm and 2 M) to connect regulator and collection bottle	0 to full vacuum Flow dependent on source and setup
Disposable Suction Filter:	0 to full vacuum 0 to 100 Lpm @ 650 mmHg (-87 kPa)
Environmental Specifications Operating Temperature Range: Storage Temperature Range: Operating and Storage Relative Humidity:	 40°F (4°C) to 120°F (49°C) 0°F (-18°C) to 160°F (71°C) 5 to 95%

4.1 Equipment Set-up

⚠**WARNING: Connect the Vacuum Regulator to the vacuum source only. Connection to pressure sources even momentarily could injure the patient or operator and damage the equipment.**

⚠**WARNING: Always connect the regulator to the vacuum source and check its operation before attaching the patient connection.**

⚠**WARNING: The Posi-Pulse ISU must be mounted vertically for proper operation. The regulator may not operate correctly in any other position**.

⚠**CAUTION:** To help prevent aspirate from entering the regulator, an Overflow Safety Trap and suction filter should be attached prior to its use. Aspirate in the regulator will impair the operation. The use of the Overflow Safety Trap and suciton filter will help prevent this and extend the life of the suction equipment.

If the regulator is equipped with an adapter for wall outlets, insert the adapter into the vacuum wall outlet. If the regulator is mounted elsewhere, connect a vacuum supply hose between the regulator's adapter port and the wall outlet. Connect the Collection Bottle's vacuum port to the regulator's fitting or Overflow Safety Trap with the appropriate vacuum tubing.

Note: For proper installation of Adapters/Probes and Fittings see Appendix.

For standard ISU operation, mount the Collection Bottle above the patient.

For optimal Posi-Pulse system operation, mount the Collection Bottle at or below patient level.

Connect the collection bottle's vacuum port to the regulator's fitting port or Overflow Safety Trap with the appropriate suction filter and vacuum tubing.

Hospital-supplied suction tubing must be used between the catheter and the collection bottle. Recommended minimum inside diameter is 0.25 in (6 mm).

An Ohio Medical High Flow Disposable Filter should be used between the Collection Bottle and the Vacuum Regulator to prevent contamination of the regulator.

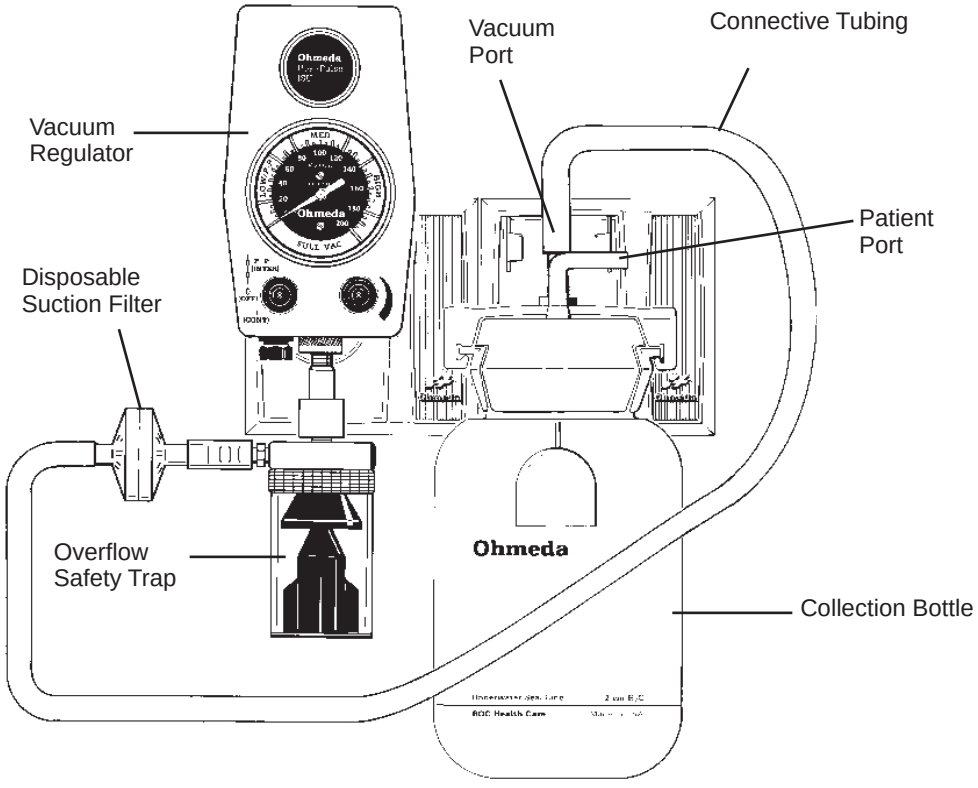
ISO 10079-3 (BS 7259: Part 2) states that "the usable volume of the collection container shall be not less than 500 ml (section 5.1.2).

Suction Filters - Hydroiphilic

Pkg of 20 6730-0350-800
Pkg of 200 6730-0351-800

Suction Filters - Hydrophobic Filter

	Tubing x tubing nipple	**1/8" NPT x tubing nipple**
Pkg of 3	6730-0570-800	6730-0580-800
Pkg of 10	6730-0571-800	6730-0581-800
Pkg of 100	6730-0572-800	6730-0582-800



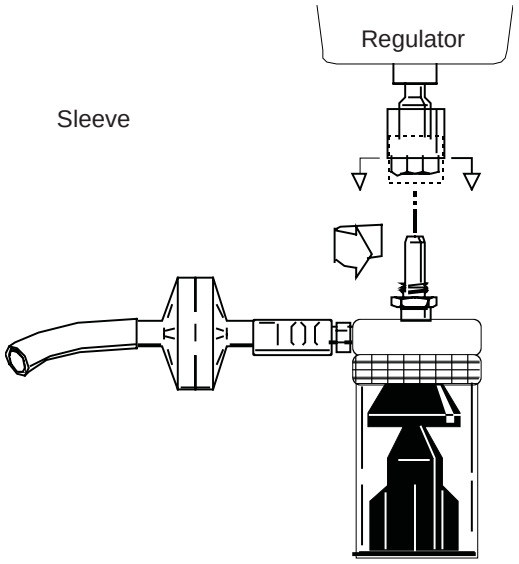
Equipment Set-up

4.1.1 Attaching the Safety Trap

CAUTION ⚠ To help prevent aspirate from entering the regulator, wall outlet and pipeline system as a result of misuse, an Overflow Safety Trap should be attached prior to its use. Aspirate in the regulator, wall outlet and pipeline system may impair their operation. The use of the Overflow Safety Trap and suction filter will help prevent this and extend the life of suction equipment.

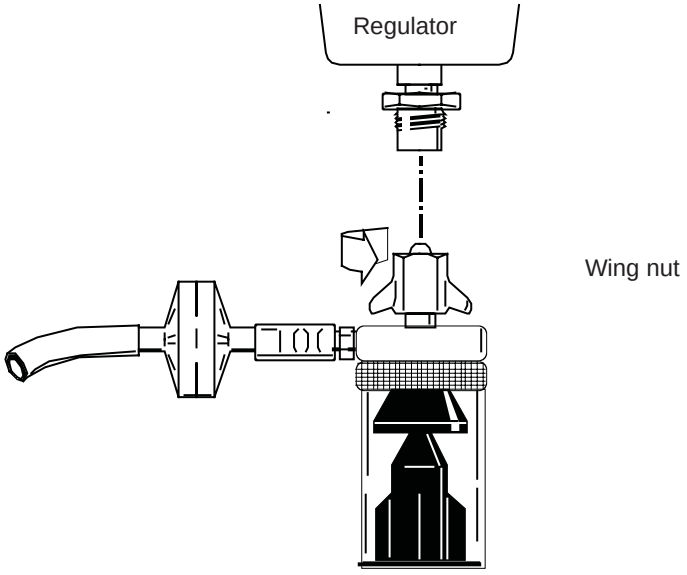
Standard fitting

1. Raise the sleeve and insert the trap into the regulator fitting.
2. Turn the trap clockwise about one and a half turns to engage the threads. The trap does not need to be screwed tight; an O-ring in the regulator fitting provides a vacuum seal. The trap should rotate freely to allow the desired tubing positioning.
3. Lower sleeve to lock trap in position.



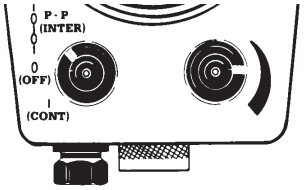
DISS fitting

1. Insert trap into the regulator fitting. Situate the tubing in the desired position.
2. Turn the DISS wing nut clockwise to engage threads and tighten (there is no O-ring, so the vacuum seal depends on a tight connection).



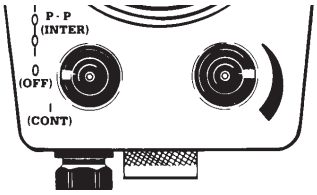
4.2 Mode Selection

|O|O| (INTER) or |O|O| P-P (INTER) - Suction is intermittent (cycles on and off) and the suction level can be adjusted with the suction control knob. This is the selection used for Posi-Pulse system operation.



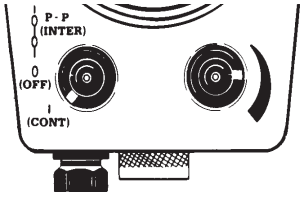
IOIOI (INTER) or IOIOI P-P (INTER)

O (OFF) - No suction is supplied to the patient.



O (OFF)

| (CONT) - Suction is continuous and can be adjusted with the suction control knob.



I (CONT)

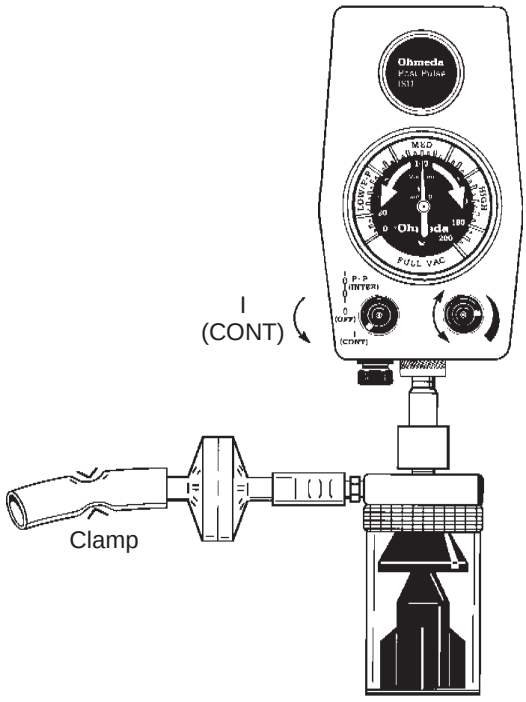
4.3 Setting the Suction Level

⚠**WARNING: The fitting port of the regulator must be occluded when setting the prescribed suction level. This prevents the patient from receiving higher than required suction levels.**

⚠**WARNING: When using the Posi-Pulse ISU with a Posi-Pulse Device, avoid using suction over 200 mm Hg/26 kPa or Posi-Pulse operation may not allow effective drainage.**

⚠**CAUTION**: A supply vacuum of less than 15 in Hg/51 kPa (380 mm Hg) may impair Posi-Pulse ISU and Posi-Pulse Device operation.

1. Turn the mode selector knob to | (CONT).
2. Clamp the connective tubing to occlude the fitting port.
3. Rotate the suction control knob until the vacuum gauge indicates the required setting.



Setting the Suction Level

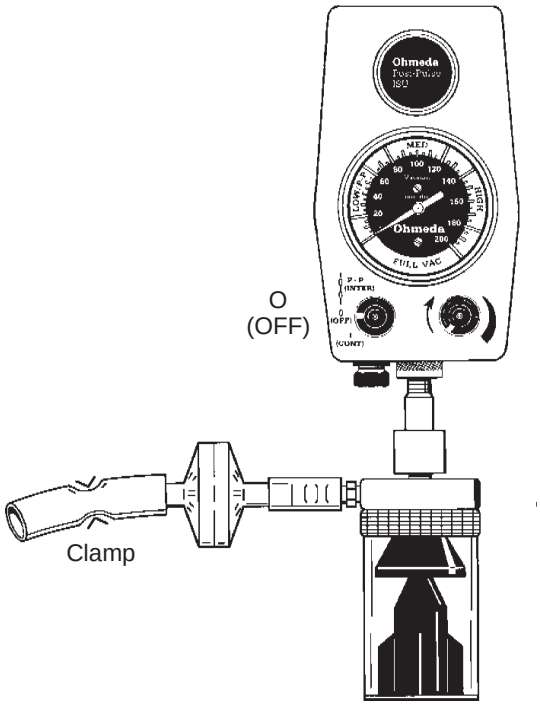
4.4 Pre-Use Checkout Procedure

⚠WARNING: The Pre-Use Checkout Procedure must be performed before using this equipment on each patient. If the regulator fails any part of the Pre-Use Checkout Procedure, it must be removed from service and repaired by qualified service personnel.

⚠WARNING: Always connect the regulator to the vacuum source and check its operation before attaching the patient connection.

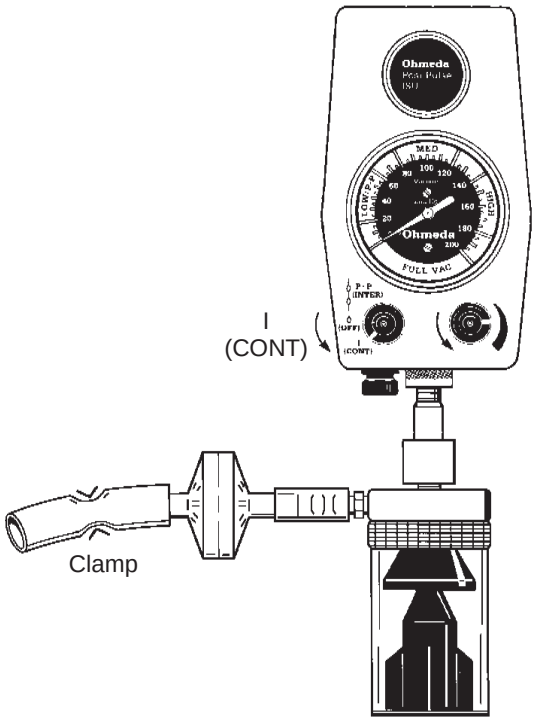
Before the vacuum regulator is used, it must be tested for correct operation as outlined below. All tests must be performed with the regulator in its normal (vertical) operating position and with a minimum supply vacuum of 19.7 in Hg/67 kPa (500 mm Hg).

1. Turn the mode selector knob to O (OFF). Rotate the suction control knob one full turn clockwise (increase). Clamp the connective tubing to occlude the fitting port. The gauge needle should not move.



Step 1

2. Turn the mode selector knob to | (CONT). Rotate the suction control knob fully counterclockwise (decrease). Clamp the connective tubing. The gauge needle should not move.



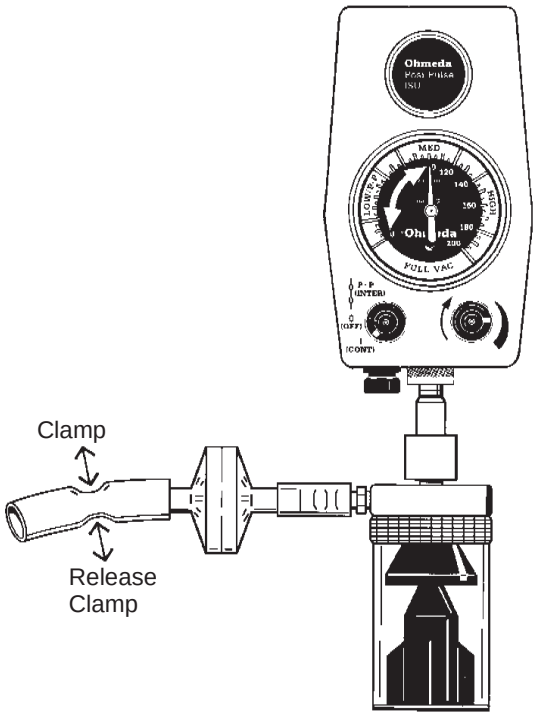
Step 2

3. Clamp Tubing

REGULATOR	SETTING
Pediatric ISU	Low: Increase the suction to 60 mmHg/8kPa

Pediatric ISU Only: Clamp tubing and rotate suction control knob fully clockwise (increase). Check that vacuum reading on gauge is no higher than 160 mmHg/21 kPa to verify this is a limited unit.

Slowly open and close the clamped tubing to create various flow rates through the regulator. Check that the suction level is maintained when the tubing is clamped.

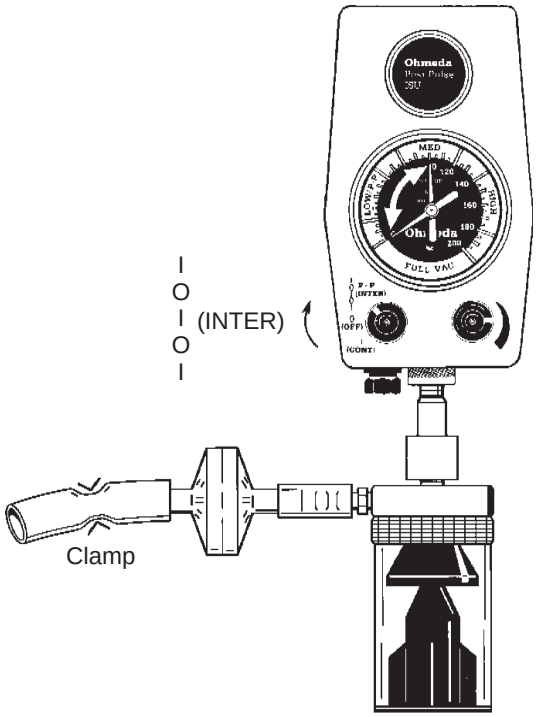


Step 3

4. Turn the mode selector knob to |O|O| (INTER) or |O|O| P-P (INTER). Clamp the connective tubing.

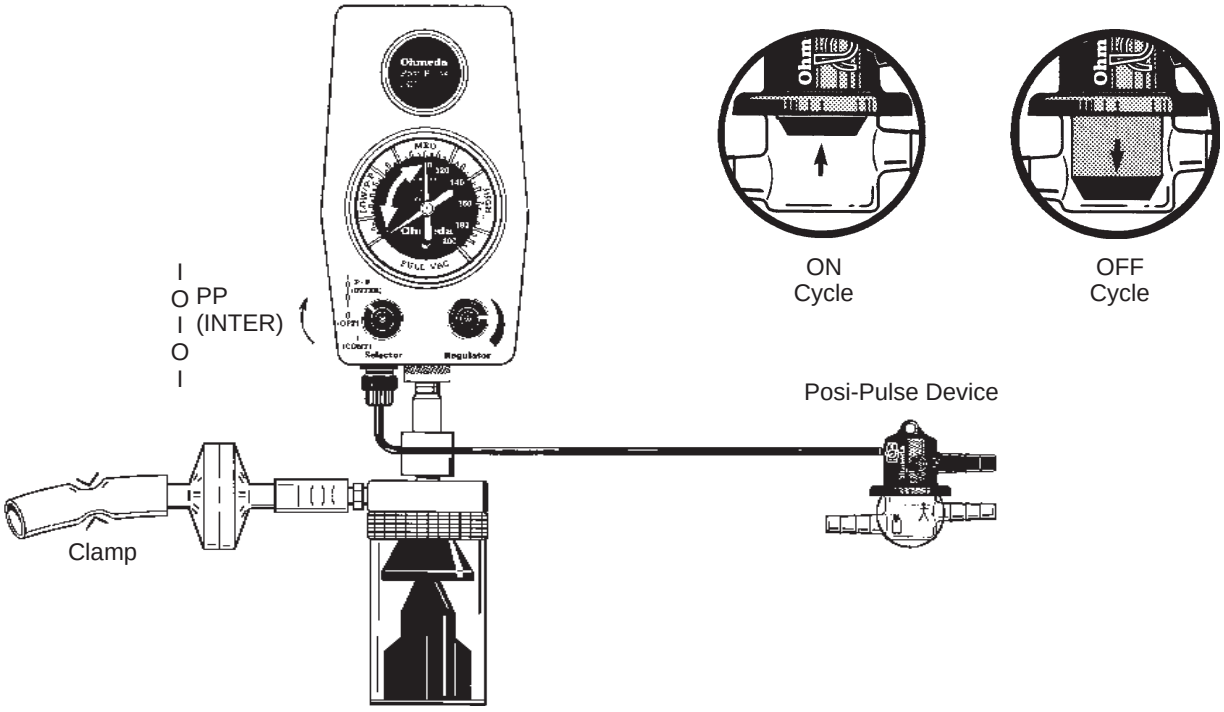
   For the ISU, ensure that the timing cycles are approximately 15 seconds “On” and 8 seconds “Off” by observing the gauge needle.

   For the Posi-Pulse ISU, ensure that the timing cycles are approximately 15 seconds “On” and 15 seconds “Off” by observing the gauge needle.



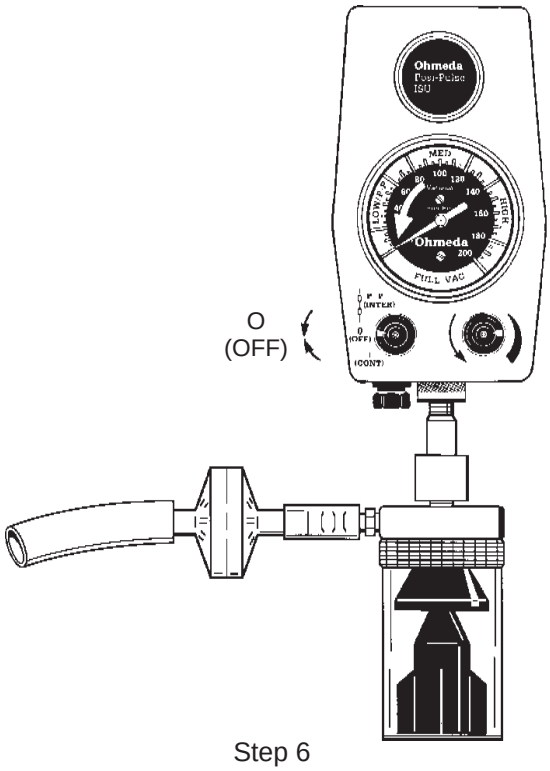
Step 4

5. For Posi-Pulse ISU ONLY with a Posi-Pulse Device
   a. Connect the Posi-Pulse signal line (blue tubing) to the attachment port.
   b. Turn the mode selector knob to |O|O| P-P (INTER).
   c. Clamp the connective tubing.
   d. During the “On” cycle, ensure that the pistons lift inside the Posi-Pulse Device’s clear chamber.
   e. When the “Off” cycle begins, ensure that there is a delay of 2 to 10 seconds before the pistons drop.



Step 5

6. Reduce the suction level to zero and turn the mode selector knob to O (OFF).

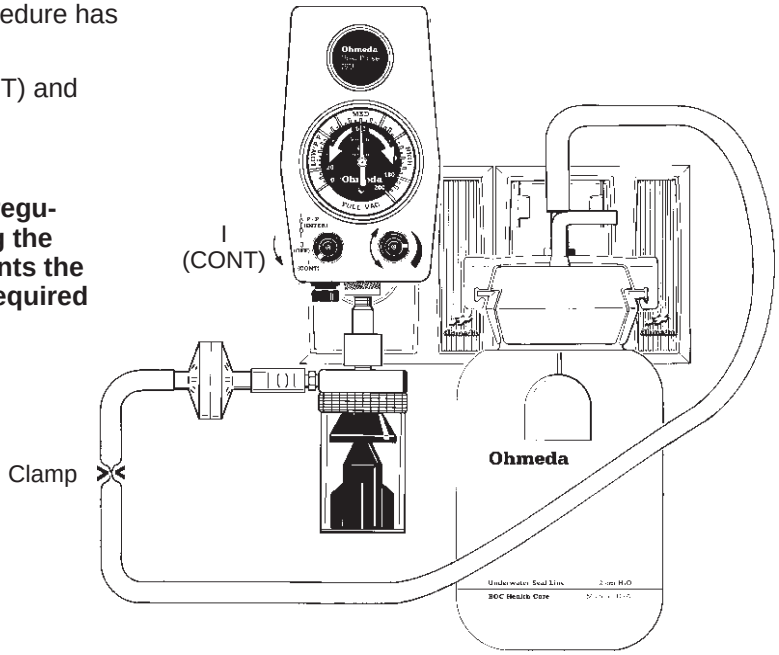


Step 6

4.5 Patient Set-up

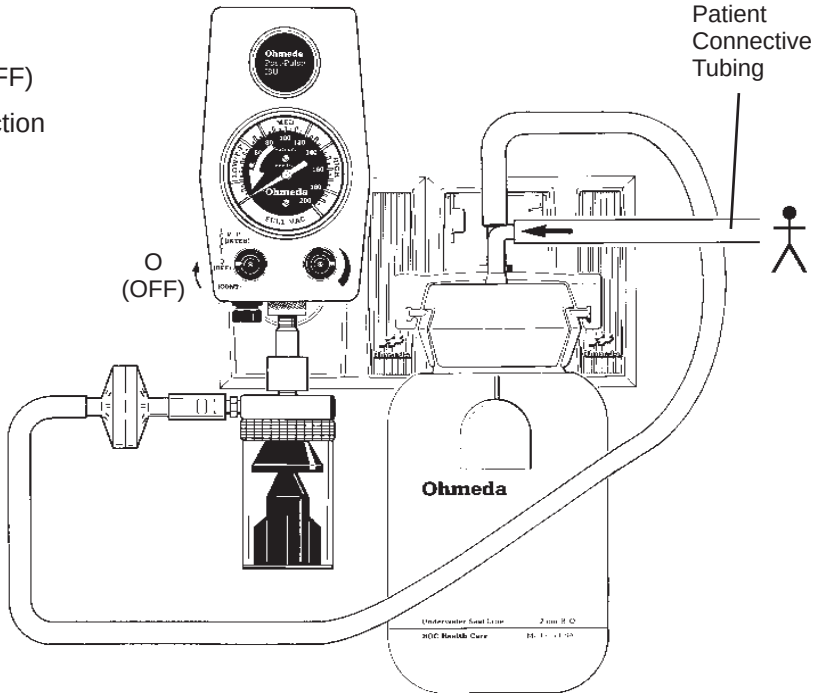
1. Make sure the Pre-Use Checkout Procedure has been performed.
2. Turn the mode selector knob to | (CONT) and clamp the connective tubing.
3. Set the prescribed suction level.

   ⚠**WARNING: The fitting port of the regulator must be occluded when setting the prescribed suction level. This prevents the patient from receiving higher than required suction levels.**



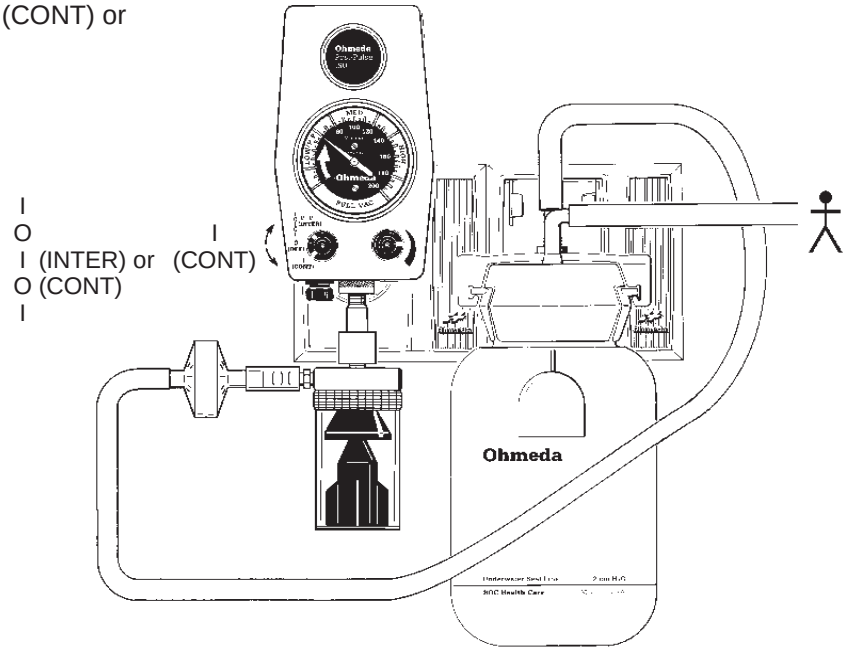
Steps 1 to 3

4. Turn the mode selector knob to O (OFF)
5. Attach the patient tubing to the Collection Bottle's patient port.



Steps 4 to 5

6. Turn the mode selector knob to | (CONT) or |O|O| (INTER)



Step 6

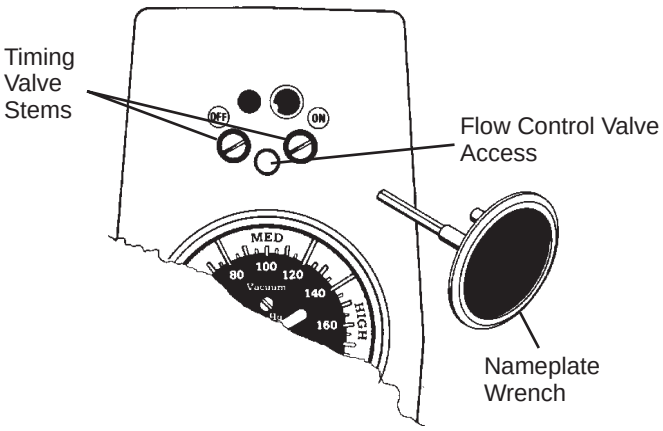
4.6 Setting the Timing Cycles

⚠WARNING: For proper Posi-Pulse operation, the Posi-Pulse ISU's "On" and "Off" timing cycles must be a minimum of 10 seconds.

⚠WARNING: If the screws on the timing valves are turned all the way clockwise, the ISU and Posi-Pulse ISU will not cycle.

To set the timing cycles, perform the following procedure.

1. Connect the supply vacuum to the adapter port.
2. Pull out the Ohmeda nameplate wrench from the front of the regulator to access the timing valves.
3. Occlude the fitting port.
4. Turn the selector mode knob to | (CONT).
5. Set 120 mm Hg/16 kPa on the regulator gauge or the maximum vacuum, whichever is lower..
6. Turn the mode selector knob to |O|O| (INTER) or |O|O| P-P (INTER) with the fitting port still occluded.
7. Wait 20 seconds.
8. If the regulator does not cycle "On", use a flat head screwdriver to rotate the "Off" timing valve stem counterclockwise until the regulator cycles "On".
9. Wait 20 seconds.
10. If the regulator does not cycle "Off" use a flat head screwdriver to rotate the "ON" timing valve stem counterclockwise until the regulator cycles "Off".
11. Once the regulator has completed an "On and Off" cycle, fine tune each cycle to the desired time by adjusting the corresponding valve. To increase the time, turn the timing valve stem clockwise. To decrease the time, turn the timing valve stem counterclockwise.



Setting the Timing Cycles and Intermittent Mode Flow Rate

4.7 Setting the Intermittent Mode Flow Rate

⚠WARNING: If the flow control valve is rotated fully clockwise, the ISU and Posi-Pulse ISU will not cycle in the intermittent mode. Drainage will cease.

A change in the intermittent mode flow rate is rarely needed. If there is a desire to change the factory set flow rate, perform the following procedure.

1. Connect the supply vacuum to the adapter port.
2. Pull the Ohmeda nameplate wrench from the front of the regulator to access the flow control valve.
3. Occlude the regulator fitting port.
4. Turn the mode selector knob to | (CONT).
5. Set 120 mm Hg/16 kPa on the regulator gauge or the maximum vacuum, whichever is lower..
6. Turn the mode selector knob to O (OFF).
7. Connect the regulator fitting port to the 10 LPM flowmeter.
8. Turn the mode selector knob to |O|O| (INTER) or |O|O| P-P (INTER).
9. Locate the flow control valve in the regulator.
10. The flow rate must be adjusted during the “On” cycle of the intermittent mode. Using the proper tool, either a Phillips head screwdriver or a ball hex key wrench, adjust the flow control valve to produce a flow rate of 8 LPM. To increase the flow rate turn the valve counterclockwise. To decrease the flow rate turn the valve clockwise.

4.8 Setting the Vacuum Limit - Pediatric ISU ONLY

⚠WARNING: It may be possible to set the vacuum limit to zero. If there is no suction present, rotate set screw counterclockwise and/or check Chapter 6/Troubleshooting.

To set the vacuum limit, perform the following procedure.

1. Connect the supply vacuum to the adapter port.
2. Occlude the regulator fitting port.
3. Remove the screw, washer, and black plastic cam form the suction control knob.
4. Turn the mode selector knob to | (CONT).
5. Turn suction control knob until desired vacuum limit is reached. NOTE: Internal adjusting set screw may need to be rotated counterclockwise to reach desired vacuum limit; See Step 6.
6. Place 1/16" hex key wrench through hole in stud to engage with set screw.
7. Hold suction control knob in place and tighten set screw (clockwise) until the end of it bottoms out on the inside of the cap bore.
8. Turn suction control knob counterclockwise and then back to the vacuum limit to test the limit setting.
9. Assemble screw, washer, and black plastic cam on suction control knob.

5/Cleaning and Sterilization

5.1 Cleaning

⚠**WARNING: After patient use, regulators may be contaminated. Handle in accordance with your hospital's infection control policy.**

5.1.1 Routine Exterior Cleaning

Routine cleaning of the regulator is recommended as a standard procedure after each use.

Wipe all exterior surfaces with a solution of water and mild detergent.

5.1.2 Internal Component Cleaning

⚠**CAUTION**: Cleaning the gauge may result in damage.

1. Refer to the Service - Disassembly and Assembly instructions.
2. All internal components with the exception of the gauge, may be cleaned with a solution of warm water and mild detergent.
3. Dry all components with a lint free cloth before assembly.

5.2 Sterilization

Should misuse occur, resulting in accidental flooding of the regulator, the regulator may be sterilized using Ethylene Oxide (ETO). After sterilization, follow the service checkout procedures in Section 8.

⚠**WARNING: Following sterilization with ethylene oxide, parts should be quarantined in a well ventilated area to allow dissipation of residual ethylene oxide gas absorbed by the material. Aerate parts for 8 hours at 130°F (54°C).**

⚠**CAUTION**: Do not steam autoclave or liquid sterilize the ISU or Posi-Pulse ISU. Severe impairment to the operation of the regulator will result. The only acceptable method of sterilization is with gas (ethylene oxide).

⚠**CAUTION**: Sterilization with ethylene oxide mixtures may cause crazing (minute superficial cracking) of some plastic parts. Crazing will be more pronounced when mixtures containing Freon® are used.

Note: ISU or Posi-Pulse ISU should only be sterilized if it is contaminated or maintenance is to be performed.

1. The regulator should be sterilized with the mode selector knob in the |O|O| (INTER) or |O|O| P-P (INTER) position.
2. The only acceptable method of sterilization is with ethylene oxide. Ethylene oxide mixtures can be used at temperatures of 125 to 135°F (52 - 57°C). If this temperature cannot be obtained, room temperature sterilization with 100% ethylene oxide can also be used. Sterilization is not recommended as a standard procedure after each use.
3. After each sterilization check the condition of the internal filters. Replace any shrunken filters before returning the regulator to service.

Notes

6/Troubleshooting

Place the regulator in the vertical position and connect to a supply vacuum of 15 in Hg/51 kPa (380 mm Hg).

Problem	Possible Causes	Remedy
A. No gauge indication and no suction in any setting	1. No supply vacuum	1. Correct supply problems
	2. Kinked tube	2. Straighten tube
	3. Poor connection	3. Check all connections and seals
	4. Blocked wall outlet	4. Unblock outlet
	5. Blocked adapter port	5. Unblock port
	6. Blocked backplate	6. Clean with soap and water and a pipe cleaner
	7. Blocked wall outlet	7. Unblock outlet
	8. Loose mounting plate	8. Tighten the 4 mounting screws
	9. Bad or missing mounting plate gasket	9. Replace/Install gasket
	10. Regulator module malfunction	10. See “Regulator module malfunction” under Problem column in this section of the manual
	11. Incorrect vacuum limit adjustment (Pediatric ISU)	11. Reset vacuum limit. (See "4.8 Setting the Vacuum Limit."
	12. Bad or missing positive pressure relief valves (Pediatric ISU)	12. Replace/Install positive pressure relief valves
B. Regulator module malfunction	1. Small o-ring failure or diaphragm rupture	1. Replace rubber components with regulator module replacement kit
	2. Stem screw loose	2. Tighten stem screw
C. No gauge indication but suction is being delivered	1. Blocked gauge pressure sensing orifice	1. Unblock orifice
	2. Gauge mechanism locked by debris	2. Remove debris
	3. Gauge mechanism damaged	3. Replace gauge

Problem	Possible Causes	Remedy
D. Gauge indication but no suction is being delivered	1. Blocked fitting port	1. Unblock port
	2. Overflow Safety Trap shut-off	2. Reset float/empty Overflow Safety Trap
	3. Blocked external filter	3. Replace external filter
	4. Blocked fitting	4. Replace fitting
E. Suction level cannot be adjusted	1. Regulator module malfunction	1. See “Regulator module malfunction” under Problem column in this section of the manual
F. Insufficient flow through regulator	1. Partial blockage in wall supply	1. Confirm wall supply open air flow meets minimum hospital requirements Unblock if necessary
	2. Partial blockage in regulator	2. Perform the Flow Test in the Service Checkout Procedure section of this manual Clear blockage if necessary
G. Inaccurate gauge reading Note: All gauge needles should return to the stop pin when no suction is being supplied.	1. Damaged gauge	2. Replace gauge
H. With the fitting port occluded, unable to decrease the suction level and gauge needle does not return to zero when switched to O (OFF)	1. Blocked filter and/ or orifice	1. Clear orifice and replace filter
	2. Damaged gauge	2. Replace gauge
	3. Blocked unilogic module filter	3. Replace filter
	4. Regulator module malfunction	4. See “Regulator module malfunction” under Problem column in this section of the manual
I. Limited suction in any setting and whistling noise from inside the regulator	1. Selector switch loose or bad selector switch o-rings	1. Tighten selector switch and/or replace o-ring
	2. Missing internal components	2. Disassemble regulator and inspect

Problem	Possible Causes	Remedy
J. Suction is delivered in the | (CONT) mode but the |O|O| (INTER) will not cycle Note: The regulator will always start in the "Off" cycle. Be sure that you wait at least 20 seconds with the regulator fitting port occluded to determine if the regulator is functioning.	1. Flow control valve blocked or turned fully in	1. Turn valve counterclockwise until unit cycles and/or inspect valve seat area
	2. Timing valves turned fully in and/or clogged	2. Turn valve counterclockwise until unit cycles and/or inspect Replace if necessary
	3. Unilogic module malfunction/missing	3. Replace filters and/or module
	4. Missing o-ring in selector switch	4. Install o-ring
	5. Blocked backplate	5. Inspect backplate flow paths Unblock if necessary
K. Regulator cycles in the |O|O| P-P (INTER) mode, but the Posi-Pulse Device pistons do not lift	1. Blue signal line disconnected	1. Reconnect blue signal line
	2. Posi-pulse connector not tightly secured to attachment port	2. Tighten connector
	3. Blue signal line kinked	3. Straighten tubing or replace
	4. Vacuum set too high on the regulator	4. Set below 80 mm Hg/ 10.7 kPa
	5. Attachment port clogged or shut off	5. Replace attachment port
	6. Pause module disconnected	6. Connect module to attachment port barb and mounting plate port
	7. Pause module malfunction	7. Replace module
	8. Posi-Pulse Device malfunction	8. Replace Posi-Pulse Device
L. Posi-Pulse pistons drop without 2 to 10 second delay from start of the "Off" cycle	1. Orifice in pause module clogged	1. Clean orifice or replace module
M. Posi-Pulse pistons lift but do not drop	1. "Off" timing cycle is too short	1. Adjust "Off" timing to 15 seconds
	2. Blue signal line tubing is kinked	2. Straighten or replace tubing

Problem	Possible Causes	Remedy
N. Maximum vacuum not limited	1. Incorrect vacuum limit adjustment (Pediatric ISU)	1. Reset vacuum limit. See "4.8 Setting the Vacuum Limit."
O. Limited suction in any setting and whistling noise from back or regulator	1. Bad or missing positive pressure releif valves (Pediatric ISU)	1. Replace/Install positive pressure relief valves
P. Vacuum limit does not remain constant	1. Loctite® on set screw is breaking down (Pediatric ISU)	1. Replace 242 Loctite® on set screw. See "7.5 Vacuum Limit".

7/Disassembly and Assembly

7.1 Service Tools and Equipment

⚠**CAUTION:** Use of lubricants other than recommended, may degrade plastic or rubber components.

The following items should be on hand during any service procedure:

- Supply Vacuum: 500 mm Hg/67 kPa minimum & 50 LPM Open Air Flow minimum
- Supply Vacuum Regulator with Gauge, 760 mm Hg/101.3 kPa Full Scale
- Low Vacuum Calibration Gauge, 225 mm Hg/ 30 kPa Full Scale (*)
  (Ohio Medical P/N 6700-0353-800)
- 50 LPM Flowmeter
  (Ohio Medical P/N 6700-0355-800)
- 10 LPM Flowmeter
  (Ohio Medical P/N 6700-0354-800)
- Phillips Head Screwdriver, No. 2
- Flat Head Screwdriver, 1/4 inch
- Open End Adjustable Wrench
- Ball Hex Key Wrench, 3/16 inch
- Open End Wrench, 11/16 inch
- Pipe Cleaner
- Wooden Toothpick (O-ring Remover)
- Tweezers (Filter Remover)
- [3] Dow® 111 Grease
  (Ohio Medical P/N 6700-0074-200)
- Tubing Clamp
- 1/2 Gallon Reservoir
- Bubble Leak Tester
- Stop Watch
- Hex Key Wrench, 1/16 inch
- 242 Loctite®

7.2 ISU and Posi-Pulse ISU

7.2.1 Disassembly

⚠WARNING: If the Vacuum Regulator is repaired or disassembled in any manner, the Service Checkout Procedure must be performed before using the equipment on the patient.

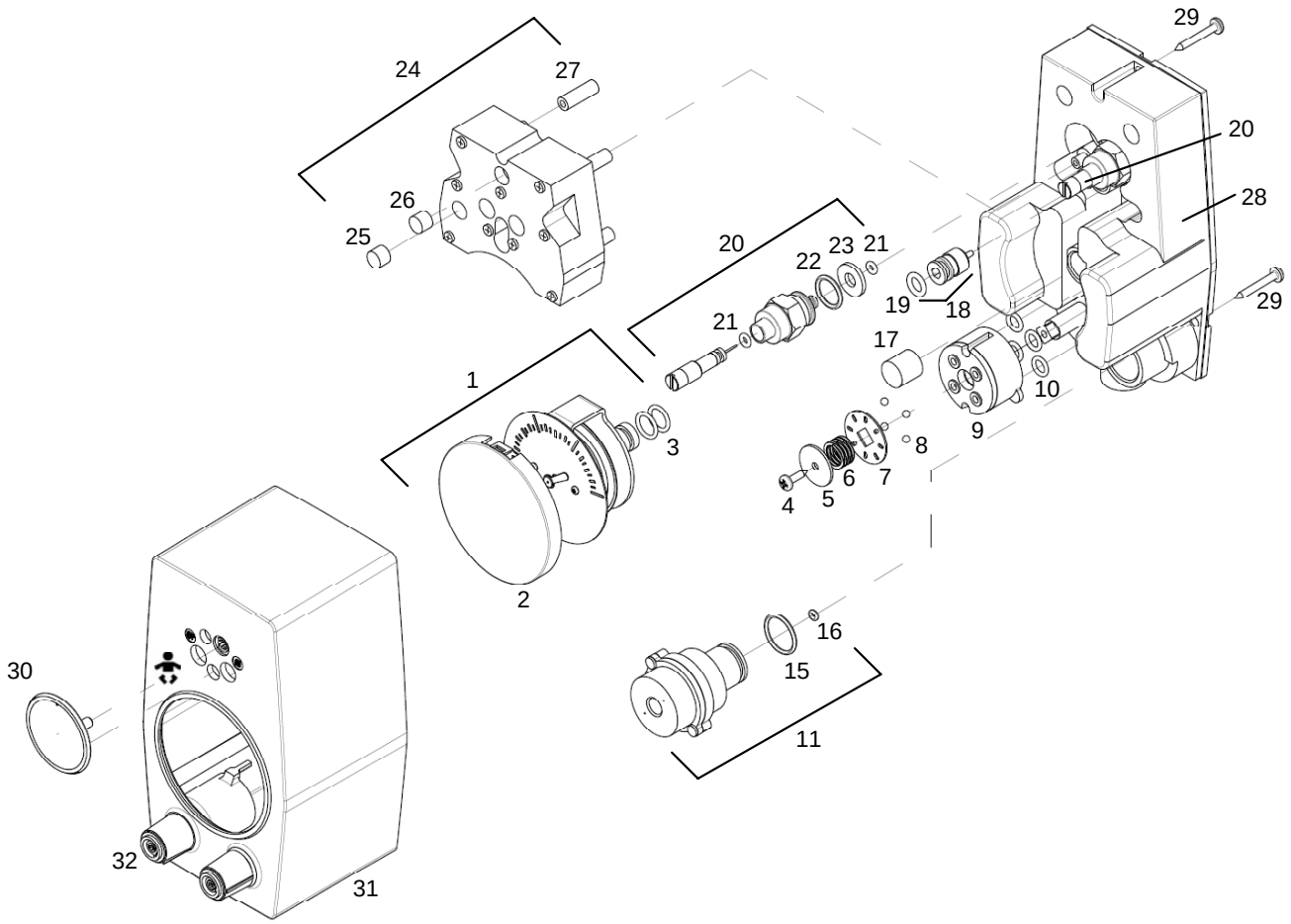
⚠WARNING: Clean and sterilize all multiple use suction equipment if contaminated before disassembly, to ensure service personnel are not exposed to hazardous contamination.

⚠**CAUTION:** The gauge assembly must be handled with utmost care to retain its precision. If the lens is removed, do not rest the gauge on its face.

(*) Accuracy: ± 1% of full scale deflection.

[3] Dow is the registered trademark of the Dow Chemical Corporation.

®Loctite is a registered trademark of Loctite Corporation.

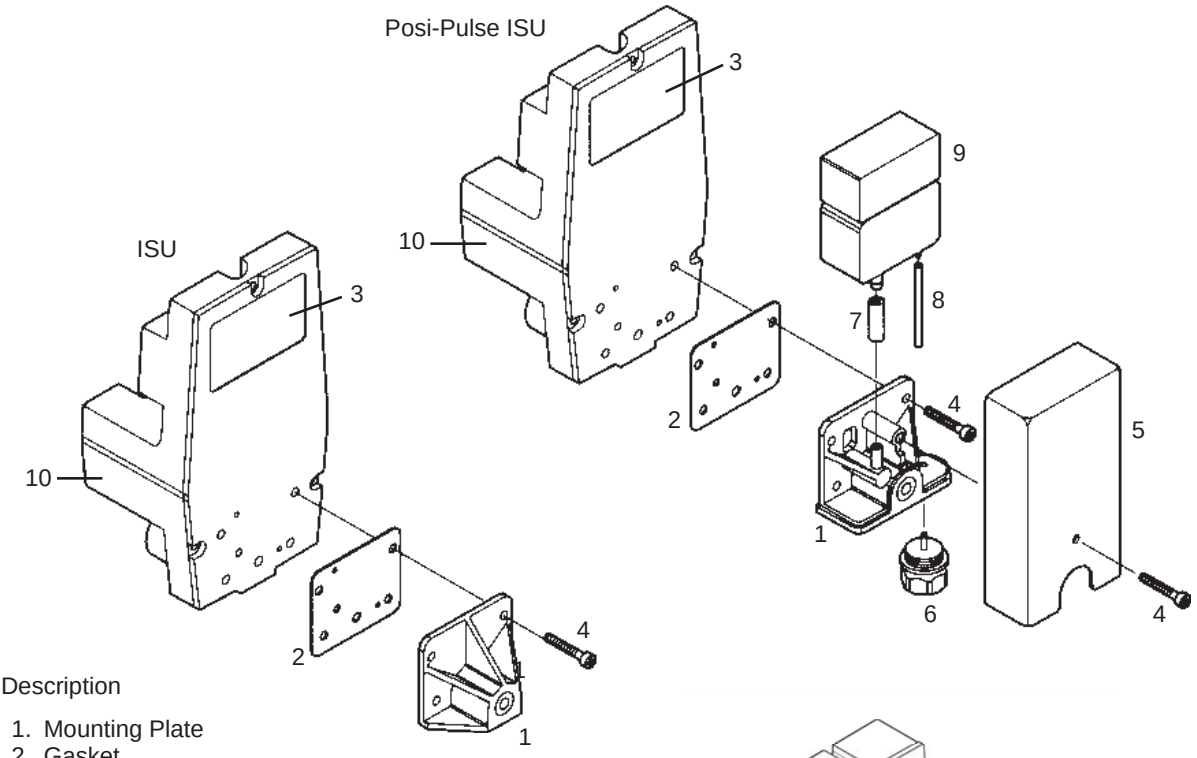


Description

1. Gauge Assembly (Low) – includes Gauge, O-rings, and Lens
2. Gauge Lens
3. O-ring, 2-012 Buna-N (2)
4. Screw
5. Retaining Washer
6. Spiral Spring Washer
7. Detent Plate
8. Ball (4)
9. Switch Main Valve Body
10. O-ring, 2-010 Buna-N (4)
11. Regulator Module (Pediatric Model Only)

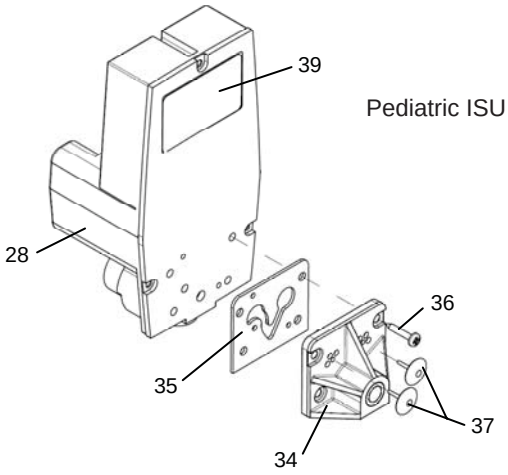
…

15. O-ring, 2-016 Buna-N
16. O-ring, 2-004 Buna-N
17. Gauge Filter
18. Flow Control Valve
19. O-ring, 2-011 Buna-N
20. Timing Valve (2)
21. O-ring, 2-006 (4)
22. O-ring, 2-014 (2)
23. Filter (2)
24. Unilogic Module
25. Filter, Green
26. Filter, Beige
27. Tube (6)
28. Backplate Assembly
29. Cover Screw (3)
30. Ohmeda Nameplate Wrench
31. Cover & Knob Assembly (w/ Baby Icon – Pediatric Model Only)
32. Mode Selector Knob



Description

1. Mounting Plate
2. Gasket
3. Serial Number Label
4. Screw (4 or 5)
5. Pause Cover
6. Posi-Pulse Attachment Port
7. Silastic Tube
8. Attachment Port/Pause Module Tube
9. Pause Module
10. Backplate Assembly



28. Backplate Assembly

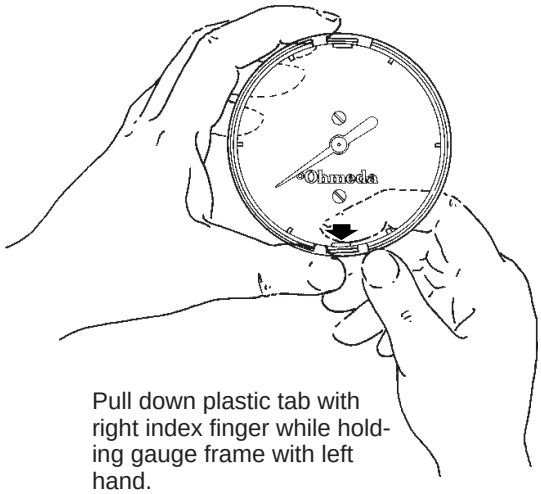
…

34. Mounting Plate (Pediatric Model Only)
35. Gasket (Pediatric Model Only)
36. Screw (4)
37. Positive Pressure Relief Valve (2) (Pediatric Model)

…

39. Serial Number Label

1. Remove all fittings from the regulator and ensure that the mode selector knob is in the O (OFF) position.
2. Remove the three cover screws from the back of the unit.
3. Rotate the suction control knob counterclockwise (decrease) until it is free from the regulator module. Carefully pull the cover and knob assembly off of the backplate.
4. To remove the gauge assembly, grasp the dial mounting bracket and pull straight out. The snap-fit lens cover can also be removed (if applicable) for replacement. Replace Gauge o-rings if required.



Pull down plastic tab with right index finger while holding gauge frame with left hand.

Snap-fit Lens Removal

5. To remove the regulator module, grasp and pull it from the backplate.

   Note: To disassemble the regulator module, refer to the Regulator Module Disassembly section.

6. Remove the unilogic module by carefully pulling the unit away from the backplate. This releases the tubing connections. Replace beige and green filters and silastic tubes if required.

7. Remove the timing valves by pulling the valve stem out of the backplate. Replace the filters if required.

   Note: To disassemble the timing valves, refer to the Timing Valve Disassembly section.

8. If the mode selector switch needs service, carefully unscrew the center retaining screw while holding the main valve body. Remove the washers, detent plate, ball bearings, and valve body. Replace o-rings if required.

9. Remove the gauge bleed hole filter from the backplate. Replace if required.

10. Remove the flow control valve by turning counterclockwise until it is out of the backplate. Take extra care when removing this valve to ensure that the threads are engaged properly. Replace o-ring if required.

11. For the ISU ONLY - Remove the ISU mounting plate by removing the four screws and pulling the plate and gasket from the backplate. Replace gasket if required.

12. For the Posi-Pulse ISU ONLY.

    a. Remove the pause cover by removing the screw.

    b. Remove the pause module by grasping and pulling it away from the mounting plate and attachment port. This releases the tubing connections. Replace tubing if required.

    c. Remove the attachment port from the mounting plate by rotating it counterclockwise with the 11/16 inch open end wrench.

    d. Remove the Posi-Pulse ISU mounting plate by removing the four screws and pulling the plate and gasket from the backplate. Replace gasket if required.

13. For the Pediatric ISU ONLY

    a. Remove the Pediatric ISU mounting plate by removing he four screws and pulling the plate and gasket form the backplate.

    b. Replace gasket if required. Use Pediatric ISU gasket ONLY (6700-0221-500)

    c. Replace positive pressure relief valves if required. To remove valves, grasp top of valve and pull.

    d. Under the suction control knob there is a brass stud and a retaining ring. DO NOT remove these parts from the cover assembly.

7.2.2 Assembly

⚠**CAUTION**: To prevent stripping the plastic threads, place the screw in the hole and turn counterclockwise until it drops into the original threads. Tighten screw.

1. Lubricate all o-rings and the gasket with a small amount of Dow® 111 Grease before assembly.

2. Install new positive pressure relief valves by pulling tail of valve through the small hole on the mounting plate. When installed, the three other vent holes should be covered. After valve is installed, clip the tail. Place the lubricated mounting plate gasket onto the mounting plate properly aligning the holes and install the mounting plate onto the backplate. Ensure the protruding posts on the mounting plate align into the backplate properly.

3. Install the four mounting plate screws and tighten.

4. For the Posi-Pulse ISU ONLY.

    a. Install the attachment port into the mounting plate and tighten by hand. Rotate an additional 1/8th revolution (45 degrees) with the 11/16 inch open end wrench. Do not over tighten.

    b. Install the pause module by aligning the large silastic tube with the mounting plate port and small silastic tube with the attachment port barb. Press until the tubes seat. The pause module will be supported by the tubes and the backplate.

    c. Place the pause cover over the pause module and slide over the mounting plate. Install the screw.

5. Install the flow control valve into its proper location. Use the proper tool to rotate the valve clockwise approximately 3 full turns, taking extra care to ensure that the threads are engaged properly.

6. Place the gauge bleed hole filter into its proper location. Push until it bottoms on the backplate.

7. Mode Selector Switch Assembly

    a. Place the four selector switch o-rings into their proper location on the backplate.

    b. Install the main valve body on the backplate post with the protruding ear at the 3 o'clock position. Ensure the valve body seals on the four o-rings.

c. Place the four ball bearings on top of the valve body. Place the detent plate on top of the four ball bearings. Place the spiral spring washer on top of the detent plate. Place the flat washer on top of the spiral spring washer.

d. Install the screw through the washer and into the backplate post. Tighten the screw.

8. Grasp the main valve body and rotate the switch in all three positions. Ensure that the protruding ear is near the 3 o'clock position after testing the switch.
9. Install the timing valves into their proper locations and push fully in so that the o-rings seal in the backplate.
10. Install the unilogic module by aligning the silastic tubes with the ports on the backplate and push fully on. If necessary, wet the tubes with water for easier installation.
11. Install the regulator module into its proper location. Rotate the module so that the protruding ears are at the 5 o'clock and 11 o'clock positions.
12. Install the snap-fit lens by placing one of the retaining tabs over the edge of the gauge face, and then pressing lightly until the other tab snaps onto the gauge face. Rotate the lens to confirm proper installation. If the lens is not the snap-fit type, simply place the lens onto the gauge ensuring it rotates easily and is resting properly.
13. Install the gauge assembly into its proper location so that the o-rings seal fully. Ensure the gauge is properly aligned. For the Pediatric ISU ONLY - The suction control knob is NOT lockable
14. Place and align the cover and knob assembly onto the backplate with the mode selector knob in the O (OFF) position. Rotate the suction control knob clockwise (increase) until the cover is flush with the backplate.
15. Install the three cover screws.
16. Install all fittings.

    Note: For proper installation of Adapters/Probes and Fittings see Appendix.

7.3 Regulator Module

⚠**CAUTION:** Do not lubricate any internal components of the regulator module.

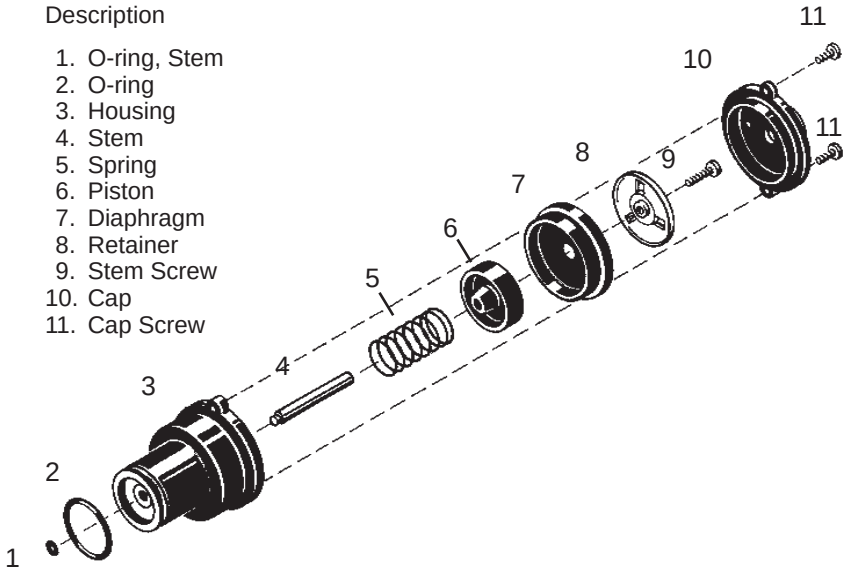
⚠**CAUTION**: The cap screws can strip the regulator module housing threads if they are screwed in too tight.

7.3.1 Disassembly

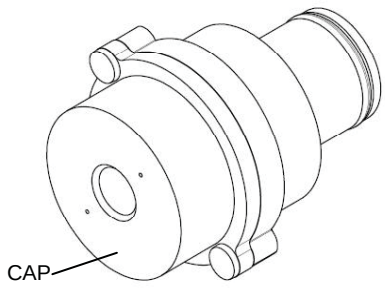
1. Remove the cap screws (2) and remove the cap.
2. Remove the o-rings (2).
3. Observe the position of the diaphragm convolution to aid in assembly.
4. Withdraw the diaphragm/stem assembly from the housing.
5. Remove the spring.
6. Grasp the stem with your fingers and unscrew the stem screw.
7. Remove the retainer, diaphragm and piston from the stem.

Description

1. O-ring, Stem
2. O-ring
3. Housing
4. Stem
5. Spring
6. Piston
7. Diaphragm
8. Retainer
9. Stem Screw
10. Cap
11. Cap Screw



Pediatric ISU Regulator Module

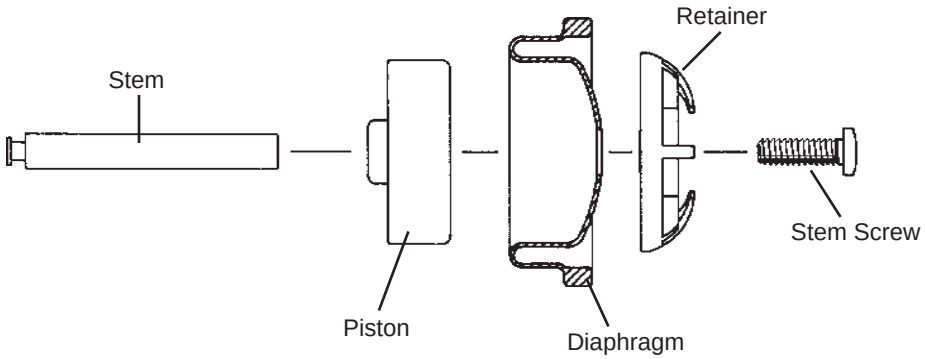


NOTE: The pediatric regulator cap is different from that of the standard ISU - shape and material (aluminum). Only use the cap pictured above on the Pediatric ISU.

Parts and Descriptions

7.3.2 Assembly

1. Return the diaphragm to its original position (convoluted), with the molded number facing the retainer.
2. Assemble the diaphragm onto the retainer by lining up the center holes as shown in the diagram..
3. Insert the piston into the diaphragm and ensure that the retainer mates with the recess in the piston.
4. Insert the stem through the piston.
5. Holding the retainer/diaphragm/piston/stem as an assembly with your fingers, insert the stem screw and tighten.
6. Place the spring in the housing.
7. Insert the retainer/diaphragm/piston/stem assembly through the spring and into the cavity in the housing. Fit the diaphragm bead into the groove in the housing.
8. Install the cap and the two cap screws.
9. Apply a small amount of Dow® 111 Grease to the o-rings only.
10. Install o-rings onto the stem and housing.



Diaphragm Assembly

7.4 Timing Valves

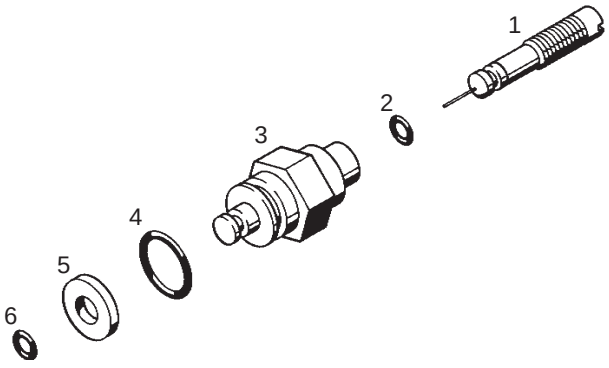
⚠**CAUTION**: Do not over-tighten the timing valve stem. Needle portion of the valve may be damaged.

7.4.1 Disassembly

1. Remove the o-rings from the valve base and replace if required.
2. Rotate the valve stem counterclockwise until it is removed from the valve base.
3. Inspect the needle and o-ring. Replace o-ring if required.

7.4.2 Assembly

1. Install all o-rings and apply a small amount of Dow® 111 Grease to the o-rings.
2. Carefully insert the valve stem into the valve base and rotate clockwise approximately 5 full turns. The final valve stem position will be set in the Service Checkout Procedure.



Description

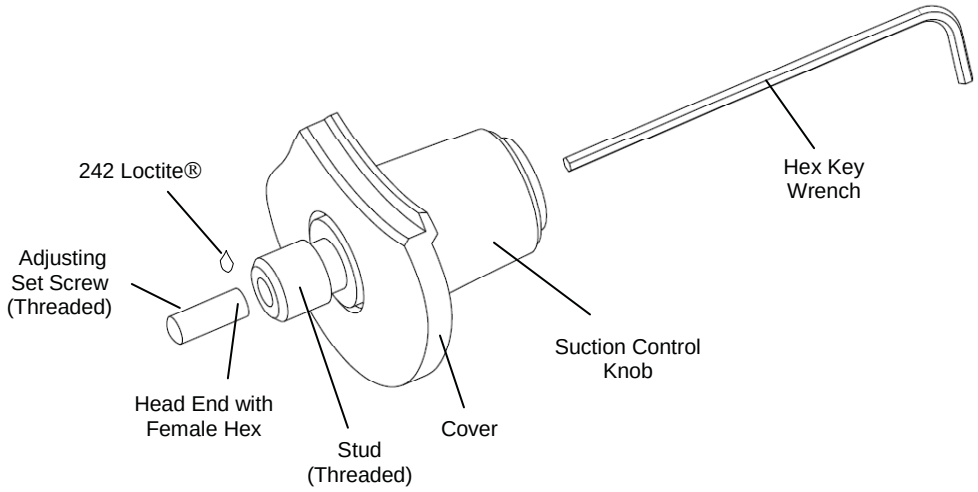
1. Valve Stem
2. O-ring
3. Valve Base
4. O-ring
5. Filter
6. O-ring

Timing Valve Assembly

7.5 Vacuum Limit - Pediatric ISU Only

This step is only necessary if the vacuum limit is not holding steady over time.

1. Remove the cover by removing the three cover screws from the back of the unit.
2. Remove the screw, washer, and black plastic cam form the suction control knob.
3. Place 1/16" hex key wrench through hole in stud to engage wit the internal adjusting set screw.
4. Hold suction control knob in place and turn the set screw clockwise to remove it out the back. **NOTE:** Set screw can not be removed by turning it counterclockwise.
5. Place a small drop of 242 Loctite® on the threads near the head end of the set screw.
6. Assemble set screw back into the stud. Insert the hex key wrench through knob and stud and engage head end of set screw. From knob site, turn hext key wrench counterclockwise to start threads. Continue to assemble by turning counterclockwise until the end of the set screw is only protruding a small amount.
7. Assemble screw, washer, and black plastic cam on suction control knob.
8. Assemble cover onto unit. See "7.2.2 Assembly, Step 14".
9. Reset vacuum limit. See "4.8 Setting the Vacuum Limit".



8/Service Checkout Procedure

⚠WARNING: If the Vacuum Regulator is repaired or disassembled in any manner, the Service Checkout Procedure must be performed before using the equipment on the patient.

Important: This entire procedure must be performed in numerical order.

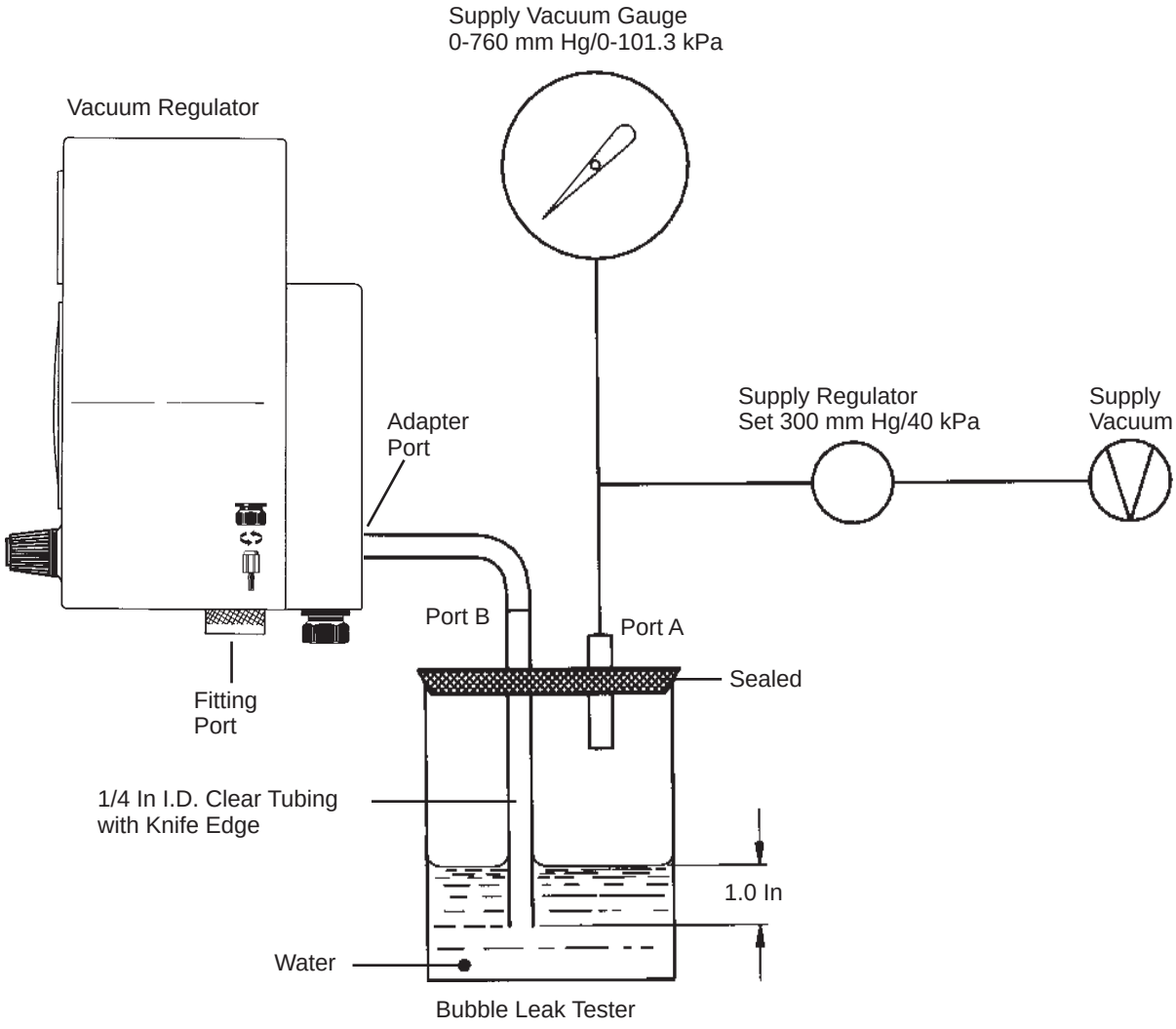
8.1 Set-up

1. Verify that a minimum of 500 mm Hg/67 kPa vacuum exists at the supply vacuum gauge.
2. The supply open flow must be 50 LPM minimum.

8.2 Leak Test - Supply Side

1. Connect the supply vacuum tubing to port “A” of the Bubble Leak Tester.
2. Connect port “B” of the Bubble Leak Tester to the regulator adapter port.
3. Set the supply vacuum to 300 mm Hg ± 30 mm Hg/40 kPa ± 4 kPa on the supply vacuum gauge.
4. Turn the mode selector knob to O (OFF). Allow the fitting port to be open to air.
5. Wait 5 seconds.
6. No more than 5 bubbles should appear in the Bubble Leak Tester for the next 10 seconds.

   Important: Prior to venting Port “A” of the Bubble Leak Tester to atmosphere (ie: turning the Supply Regulator off) ensure the tubing from Port “B” has been disconnected from the Adapter Port of the Vacuum Regulator.



Bubble Leak Test - Supply Side

8.3 Flow Test

1. Remove the Bubble Leak Tester from the supply vacuum connection and connect the supply vacuum directly to the regulator adapter port.
2. Set the supply vacuum to 450 mm Hg ±25 mm Hg/60 kPa ±3.3 kPa on the supply vacuum gauge.

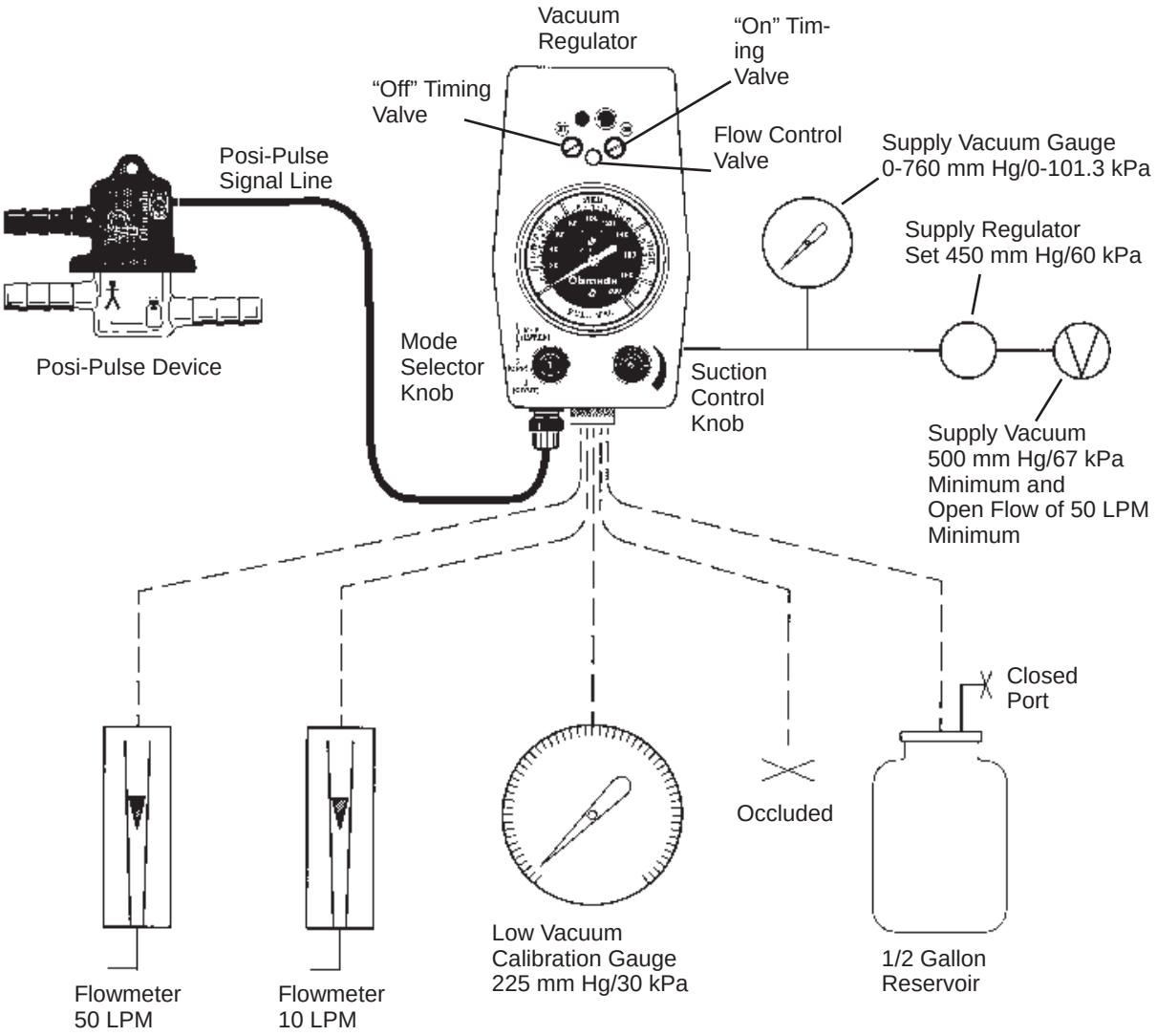
8.3.1 Continuous Mode Flow Test

1. Connect the regulator fitting port to the 50 LPM flowmeter.
2. Turn the mode selector knob to | (CONT).
3. Rotate the suction control knob fully clockwise (increase).
4. Verify that the flowrate exceeds :
   Pediatric ISU: 25 LPM

8.3.2 Intermittent Mode Flow Test

1. Using the proper tool, rotate the flow control valve two turns counterclockwise.
2. Clamp the fitting port tubing.
3. Set 120 mm Hg/16 kPa on the regulator gauge or the maximum vacuum, whichever is lower..
4. Connect the regulator fitting port to the 10 LPM flowmeter.
5. Turn the mode selector knob to |O|O| (INTER) or |O|O| P-P (INTER).
6. During the “On” cycle, adjust the intermittent mode flow rate to 8 LPM ± 1 LPM.

   Note: If the regulator does not cycle “On” after 20 seconds in the intermittent mode, use a flat head screwdriver and rotate the “Off” timing valve stem counterclockwise until it cycles “On”.



Service Checkout Tests

8.4 Gauge Test

Note: All Ohio Medical Gauges are supplied with an accuracy of ±5% of full scale deflection throughout their range. The ISU and Posi-Pulse ISU vacuum gauges have an accuracy of ±10 mm Hg/1.3 kPa.

Note: All gauge needles should return to the stop pin when no suction is being supplied. Gauges which do not comply may be out of calibration.

When checking gauge accuracy, be sure that the calibration gauge has an accuracy of 1% of full scale deflection or better.

1. Connect the regulator fitting port to the low vacuum calibration gauge with tubing.
2. Turn the mode selector knob to | (CONT).
3. Assure that the regulator gauge is in agreement with the low vacuum calibration gauge within the ±10 mm Hg/1.3 kPa tolerance. Recommended test points are:

   Pediatric ISU: 40, 80, and 200 mm Hg

   or

   Pediatric ISU: 5, 10, and 26 kPa
4. Rotate the suction control knob fully clockwise (increase) and verify the gauge's reading is in the FULL VAC range.
5. Rotate the suction control knob fully counter-clockwise (decrease) and verify the gauge's reading decreases to zero.

8.5 Regulation Test

1. Disconnect the low vacuum calibration gauge from the regulator fitting port.
2. Occlude the fitting port.
3. Pediatric ISU: Set 60 mm Hg/8 kPa on the regulator gauge.
4. Open and close the fitting port several times.
5. Check that the regulator gauge reads between: Pediatric ISU: 50 mm Hg/6.7 kPa and 70 mm Hg/9.3 kPa when the regulator fitting port is occluded.

8.6 Timing Cycle Adjustment

1. Occlude the regulator fitting port.
2. Set 120 mm Hg/16 kPa on the regulator gauge or the maximum vacuum, whichever is lower.
3. Turn the mode selector knob to |O|O| (INTER) or to |O|O| P-P (INTER).
4. Adjust the timing cycles:

   a. ISU -

      On cycle 15 seconds ± 3 seconds
      Off cycle 8 seconds ± 3 seconds

   b. Posi-Pulse ISU -

      On cycle 15 seconds ± 3 seconds
      Off cycle 15 seconds ± 3 seconds

   Note: Adjustment procedures are outlined in the Operations Section of this manual under the heading "Setting the Timing Cycles".

8.7 Vacuum Build-up/Bleed-down Test - Intermittent Mode

1. Connect the regulator fitting port to the 1/2 gallon reservoir.
2. During the "On" cycle, check that the suction increases to the preset 120 mm Hg/16 kPa on the regulator gauge or the maximum vacuum, whichever is lower, in 5 seconds or less.
3. During the "Off" cycle, check that the suction decreases to zero on the regulator gauge (zero stop pin) in 5 seconds or less.
4. If the regulator fails either of the Build-up or Bleed-down tests, replace the regulator module.

8.8 Posi-Pulse Test

For Posi-Pulse ISU ONLY with a Posi-Pulse Device.

1. Connect the Posi-Pulse signal line (blue tubing) to the Posi-Pulse attachment port.
2. Connect the regulator fitting port to the 1/2 gallon reservoir.
3. Turn the mode selector knob to |O|O| P-P (INTER).
4. Set 120 mm Hg/16 kPa on the regulator gauge during the "On" cycle.
5. Ensure that the pistons inside the Posi-Pulse Device's chamber lift during the "On" cycle.
6. Ensure that there is a delay of 2 to 10 seconds before the pistons drop during the "Off" cycle.

8.9 Bleed Test

1. Turn the mode selector knob to I (CONT).
2. Occlude the regulator fitting port and set the vacuum level to 120 mm Hg/16 kPa or the maximum vacuum, whichever is lower.
3. Turn the mode selector knob to O (OFF) and observe the gauge needle. It must return to zero within 10 seconds.

8.10 Leak Test - Patient Side

1. Turn the mode selector knob to O (OFF).
2. Connect the regulator fitting port tubing to port “A” of the Bubble Leak Tester.
3. Rotate the suction control knob fully counterclockwise (decrease).
4. Turn the mode selector knob to | (CONT).
5. Wait 5 seconds.
6. No bubbles should appear in the Bubble Leak Tester for the next 10 seconds.

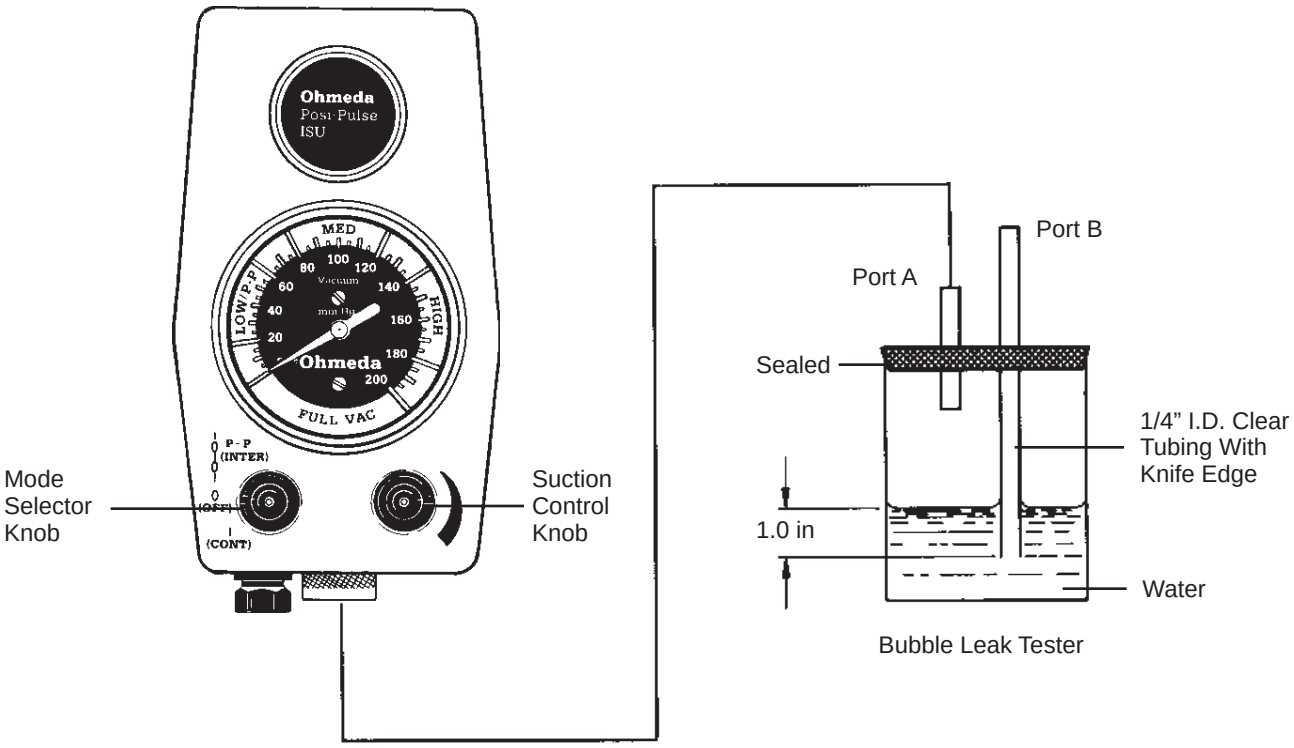
8.11 Vacuum Limit Adjustment - Pediatric ISU ONLY

1. Occlude the regulator fitting port.
2. Remove the screw, washer, and black plastic cam form the suction control knob..
3. Turn the mode selector knob to | (CONT).
4. Adjust vacuum limit. Maximum vacuum level shall be no greater than 160 mmHg/20 kPa.
5. Assemble screw, washer, and black plastic cam on suction control knob.

Note: Adjustment procedures are outlined in "4.8 Setting the Vacuum Limit".

8.12 Visual Check - Pediatric ISU ONLY

1. Check that baby icon is present on cover of unit.
2. Check that low gauge is installed in unit.
3. Check mounting plate for positive pressure relief valves (Qty 2).



Bubble Leak Test-Patient Side

9.1 General Maintenance of Suction Equipment

⚠WARNING: The Pre-Use Checkout Procedure must be performed before using this equipment on each patient. If the regulator fails any part of the Pre-Use Checkout Procedure, it must be removed from service and repaired by qualified service personnel.

⚠WARNING: Clean and sterilize all suction equipment if contaminated before disassembly, to ensure service personnel are not exposed to hazardous contamination.

ISUs and Posi-Pulse ISUs should be kept in use or used on a rotating basis. Internal parts of unused equipment may tend to deteriorate.

Maintenance of the vacuum piping system is as important as maintenance of the suction equipment. The use of Collection Bottles with reliable shut-off valves, Overflow Safety Trap assemblies and disposable suction filters will protect the regulator and piping system. The flow rate at the wall outlet should be checked on a yearly basis and suitable cleaning of the outlets should be performed. The flow rate measurement should meet local standards.

Routine maintenance and inspection are important to the performance of suction equipment. The following is a recommended list for care of suction equipment after each patient use.

1. Perform a thorough cleaning by washing all bottles, tubing, metal connectors, etc, and removing all residue.
2. Wipe all exterior surfaces with a solution of water and mild detergent.
3. Perform a careful visual inspection.
4. Check that the High Flow Disposable Suction Filter is clean and in good condition.
5. Check that all tubing is in good condition and connected securely to the correct ports.
6. Check the floats in the Overflow Safety Trap and Collection Bottle for correct operation.
7. Perform the Pre-Use Checkout Procedure.

9.2 Recommended Maintenance Schedule

In addition to the Pre-use Checkout Procedure, the following periodic maintenance should be performed.

9.2.1 Maintenance Schedule

Item	Minimum Frequency	Comments
Service Checkout Procedure	Every 4 months this manual. Repair as necessary	If the regulator does not pass the Service Checkout Procedure, refer to the Troubleshooting Section of
Elastometric Components	Inspect every 4 months; Replace every 24 months.	Replace as necessary to minimize in-use failures.

- Regulator Module O-rings and Diaphragm
- Gauge O-rings
- Switch O-rings
- Timing Valve O-rings
- Flow Control Valve O-ring
- Mounting Plate Gasket
- Pause Module Silastic Tubing
- Unilogic Module Silastic Tubing
- Positive Pressure Relief Valves

Internal Filters	Inspect every 4 months Replace every 12 months.	Replace as necessary. Replacement interval will depend greatly on hours of usage and condition of environment.
High Flow Disposable Suction Filter	Replace after each patient use	Replace more frequently if flow deteriorates

9.3 Repair Policy

⚠WARNING: Clean and sterilize all multiple use suction equipment before shipment to ensure transportation personnel and /or service personnel are not exposed to any hazardous contamination.

⚠CAUTION: Do not steam autoclave or liquid sterilize the ISU or Posi-Pulse ISU. Severe impairment to the operation of the regulator will result. The only acceptable method of sterilization is with gas (ethylene oxide).

⚠**CAUTION:** Only competent individuals trained in the repair of this equipment should attempt to service it.

Do not use malfunctioning equipment. Make all necessary repairs. Have the equipment repaired by qualified service personnel or by Ohio Medical. Parts listed in this service manual may be repaired or replaced by a competent, trained person who has experience in repairing devices of this nature. After repair, perform the Service Checkout Procedure to ensure that it is functioning properly, and complies with the manufacturer's published specifications.

9.4 Technical Assistance

If technical assistance is required, contact Ohio Medical technical support or field operations listed on the back cover.

9.5 Return Instructions

1. Clean and sterilize the Vacuum Regulator.
2. Package the Vacuum Regulator securely for protection, preferably in the original container.
3. Include a letter describing in detail any difficulties experienced with the Vacuum Regulator. Include the person, title, and telephone number to contact for functional questions.
4. Ohio Medical now offers a ten year warranty on vacuum regulators sold on or after July 1, 2005. If the vacuum regulator was purchased on or after July 1, 2005 and is less than ten years old or if the vacuum regulator is covered under the previous warranty and is less than five years old, include the warranty information that came with the device and a copy of the invoice.
5. Include a purchase order to cover repair of a regulator not under warranty.
6. Ship the Vacuum Regulator prepaid. Write your return address and billing address information on the package or letter that comes with the package.

   For U.S.A. Warranty Repairs (purchased on or after July 1, 2005 and is less than ten years old form the purchase date or if the vacuum regulator is covered under the previous warranty and is less than 5 years old from the purchase date) mail the package to:

   Ohio Medical Corporation
   1111 Lakeside Drive
   Gurnee, IL 60031-4099

   For U.S.A. Non-Warranty Repairs (more than ten years older under the new warrant or more than five years sold under the previous warranty) mail the package to:

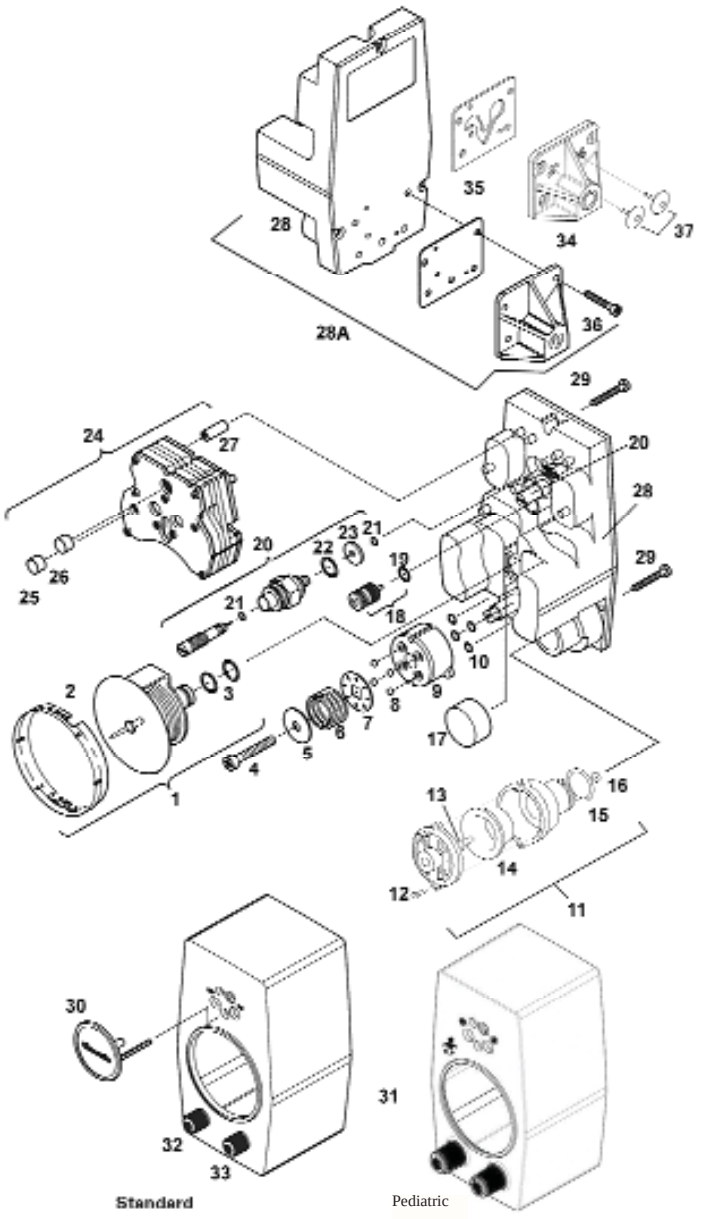
   Ohio Medical Corporation
   1111 Lakeside Drive
   Gurn4ee, IL 60031-4099

   In other locations contact your nearest Ohio Medi cal office or authorized Ohio Medical distributor.

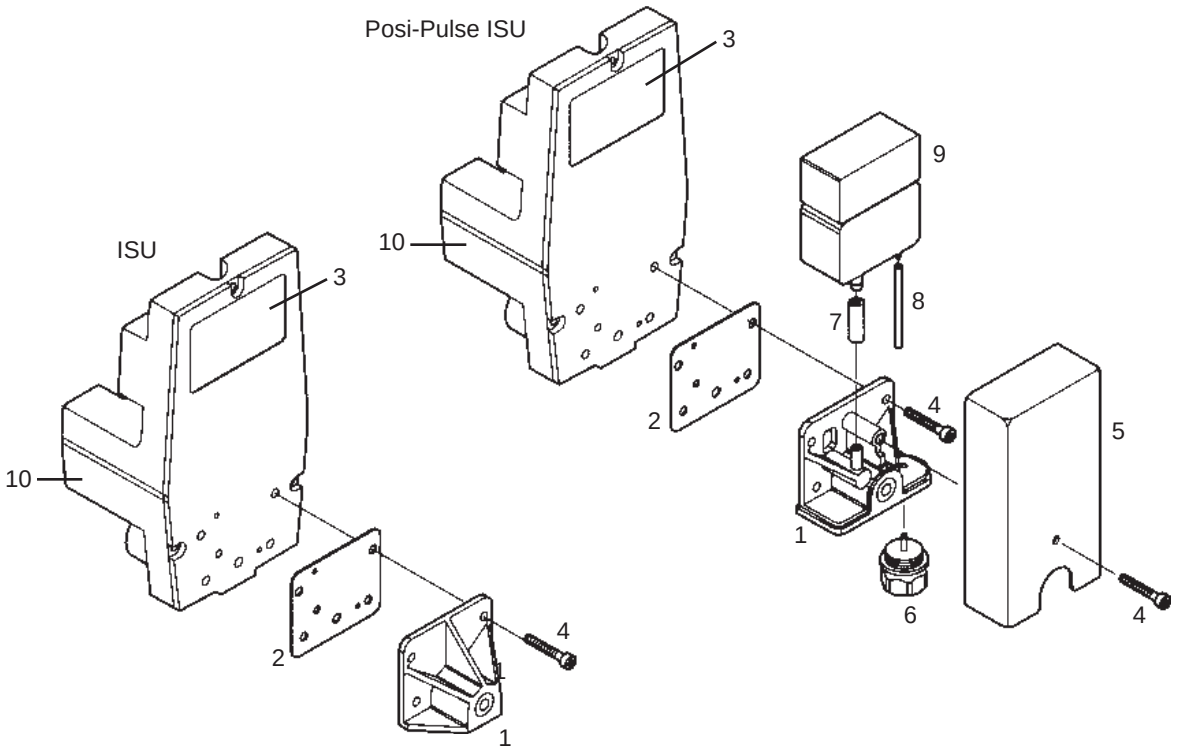
10/Ordering Information

10.1 Illustrated Parts

	Parts		Multi-Paks		Kits*			
	Description	Part Number	Part Number	Qty/Pak	0211-5887-300 Filter & O-ring Kit	0211-0474-870 O-Ring Kit	0221-5884-870 Filter Kit	6700-0030-700 Diaphragm Rpl Kit
1	Gauge Assy.							
	(Includes O-rings and Lens)							
	North American Std, 0-200 mmHg	6700-0050-200	0205-8689-870	4				
	North American Low, 0-160 mmHg	6700-0050-202	6700-0098-200	4				
	International Std, ccw, 0-200 mmHg	6700-0090-200						
	International Low, ccw, 0-160 mmHg	6700-0050-205						
2	Gauge Lens	6700-0087-500						
3	O-ring, 2-012 Buna-N	6700-0130-500			2	2		
4	Screw	6700-0150-400						
5	Retaining Washer	0402-0748-300						
6	Spiral Spring Washer	6700-0168-400						
7	Detent Plate	0214-3213-300						
8	Ball	0409-1684-300						
9	Switch Main Valve Body	0221-5891-300						
10	O-ring, 2-010 Buna-N	6700-0131-500			4	4		
11	Regulator Module							
	Standard Model	6700-1225-800	6700-0026-700	6				
	Pediatric Model Only	6700-0685-850	6700-0686-850	6				
12	Screw, 4-20, Ph. Hd							2
13	Screw, 4-40, Ph. Hd							1
14	Diaphragm							1
15	O-ring, 2-016 Buna-N	6700-0136-500			2	2		1
16	O-ring, 2-004 Buna-N	0210-0527-300			1	1		1
17	Gauge Filter	0210-6540-300			2		1	
18	Flow Control Valve	0207-0132-300						
19	O-ring, 2-011 Buna-N	6700-0133-500			1	1		
20	Timing Valve	0207-8295-300	0207-8298-870	6				
21	O-ring, 2-006 Buna-N	0210-0593-300			4	4		
22	O-ring, 2-014 Buna-N	6700-0135-500			2	2		
23	Filter	0221-5883-300			2		2	
24	Unilogic Module	6700-0093-200	6700-0024-700	4				
24	Filter, Green	0221-5879-300			1		1	
24	Filter, Beige	0221-5880-300			1		1	
27	Tube	6700-0095-400						
28	Backplate Assy.							
	North American	6700-0426-850						
	International	6700-0427-850						
28A	Backplate Assy. w/Mount Plate							
	North American Standard	6700-0002-700	6700-0090-700	4				
	North American Low	6700-0680-850	6700-0681-850	4				
	International Standard CE	6700-0003-700						
	International Low CE	6700-0682-850						
29	Cover Screw	6700-0152-400						
30	Ohmeda Nameplate Wrench	6700-0043-400						
31	Cover & Knob Assy.							
	Standard Model	6700-0009-700	6700-0091-700	4				
	Pediatric ISU Model Only (w/Baby Icon)	6700-0683-850	6700-0684-850	4				
32	Mode Selector Knob	0221-5897-300	0221-5852-870	6				
33	Suction Control Knob							
	Standard Model Only	0221-5898-300	0221-5853-870	6				
	Pediatric Model – order item 31							
34	Mounting Plate, Std ISU							
	Standard Model Only	6700-0053-400						
	Pediatric Model - order item 38	6700-0252-400						
35	Gasket							
	Standard Model Only	6700-0030-500						
	Pediatric Model - order item 38	6700-0221-500						
36	Screw	6700-0151-400						
37	Positive Pressure		6700-0687-850	2				
	Relief Valves (Pediatric ISU Only)							
38	Pediatric Mnounting Plate Assembly Only	6700-0689-850						
39	Service Manual	6700-0199-700						



* Kits contain the noted quantities of items in the corresponding rows



Description	Part Number
1. Mounting Plate, Posi-Pulse ISU	6700-0054-400
Mounting Plate, ISU	6700-0053-400
2. Gasket	6700-0030-500
3. Serial Number Label	
4. Screw (4 or 5)	6700-0151-400
5. Pause Cover	6700-0023-700
6. Posi-Pulse Attachment Port*	6700-0086-700
7. Silastic Tube	6700-0095-400
8. Attachment Port/Pause Module Tube	6700-0090-400
9. Pause Module (Includes 7 & 8)	6700-0094-200
10. Backplate Assembly	6700-0043-500

(*) These parts are available as service kits. See section 10.2.

10.2 Service Kits

1. Regulator Module Replacement Kit 6700-0030-700

   Includes the following parts:
   O-ring, Stem
   O-ring
   Diaphragm
   Stem Screw
   Cap Screw (2)

   These parts are available only in kit form. If other parts are needed for replacement, the entire Module must be ordered. (6700-1225-800)

2. Complete Filter and O-ring Replacement Kit 0221-5887-300

   Includes all O-rings (16) and Filters (5) for servicing the regulator

3. Complete O-ring Replacement Kit 0210-0474-870

   Includes all O-rings (16) for servicing the regulator

4. Complete Filter Replacement Kit 0221-5884-870

   Includes all Filters (5) for servicing the regulator

5. Mode Selector Knob Replacement Kit 0221-5897-300

   Includes the following parts:
   Mode Selector Knob
   Extension
   Hardware

6. Suction Control Knob Replacement Kit 0221-5898-300

   Includes the following parts:
   Suction Control Knob
   Threaded Stud
   Hardware

7a. ISU Backplate Replacement Kit, North American..... 6700-0002-700

   Includes the following parts:
   Backplate Assembly
   Gasket
   ISU Mounting Plate
   Screw (4)

7b. ISU Backplate Replacement Kit, International..... 6700-0003-700

   Includes the following parts:
   Backplate Assembly
   Gasket
   ISU Mounting Plate
   Screw (4)

8a. Posi-Pulse ISU Backplate Replacement Kit, North American 6700-0032-700

   Includes the following parts:
   Backplate Assembly
   Gasket
   Posi-Pulse ISU Mounting Plate
   Screw (4)

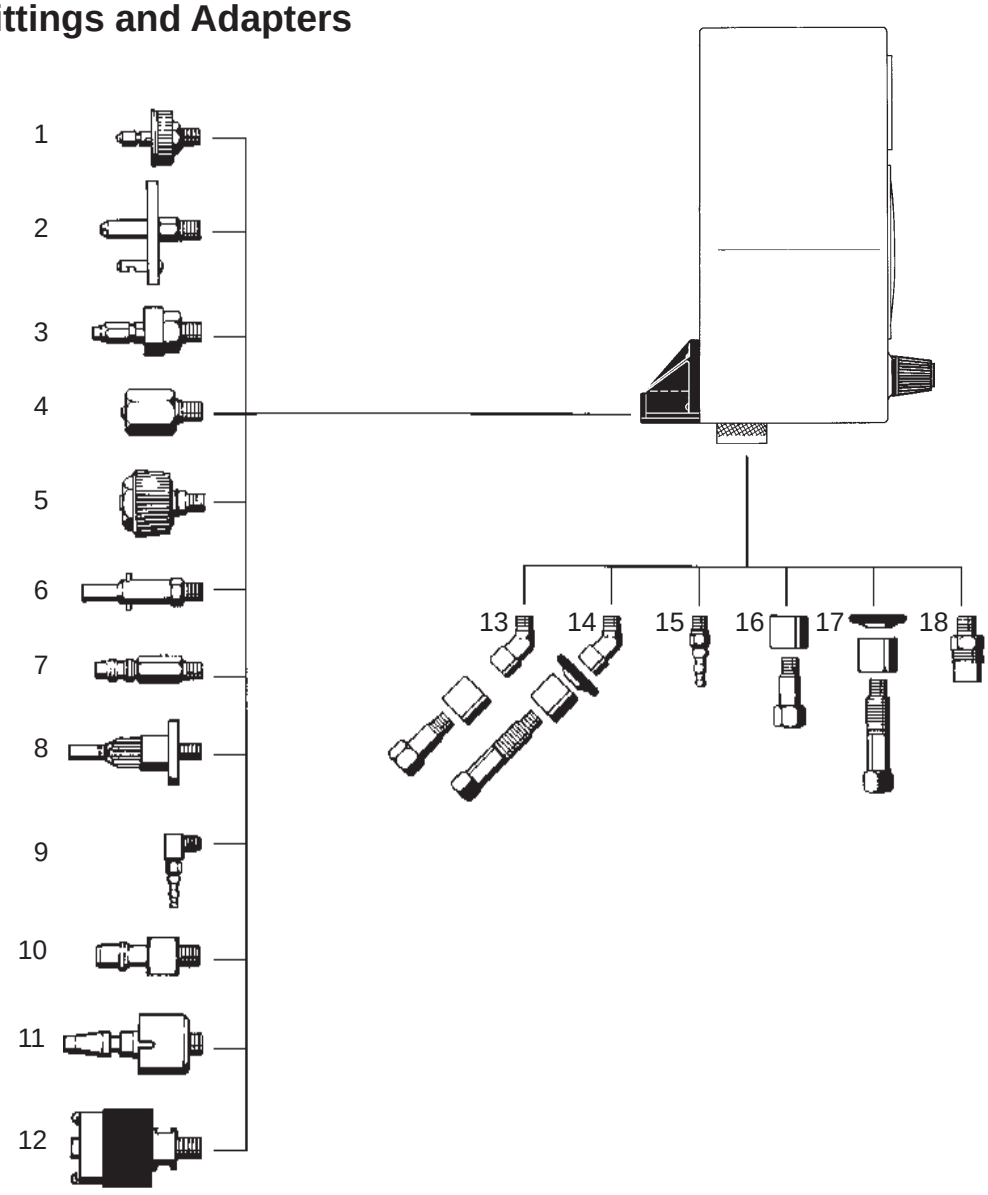
8b. Posi-Pulse ISU Backplate Replacement Kit, International..... 6700-0033-700

   Includes the following parts:
   Backplate Assembly
   Gasket
   Posi-Pulse ISU Mounting Plate
   Screw (4)

9. Posi-Pulse Attachment Port Kit 6700-0088-700

   Includes the following parts:
   Posi-Pulse Attachment Port (4)
   Attachment Port/Pause Module Tube (4)

10.3 Fittings and Adapters



1. Diamond Adapter 0221-2685-802
2. NCG Adapter (Round)..... 0221-0204-802
   NCG Adapter (Rectangle) 0221-0205-800
3. Schrader Adapter 0221-0690-731
4. DISS Union Nut & Gland..... 6700-0094-700
5. DISS Hand-I-Twist Nut & Gland..... 0204-6717-800
6. OES Adapter 0221-0152-300
7. Puritan Adapter 0221-0106-300
8. Medstar Adapter..... 0221-0163-300
9. 90° Tubing Nipple..... 6700-0095-700
10. Drager Adapter..... 6700-0051-700
11. BOC IV Adapter..... 6700-0057-700
12. Air Liquide Adapter..... 6700-0091-400
13. 45° Locking Gland * 6700-0143-700
14. 45° Threaded Locking Gland *..... 6700-0141-700
15. Tubing Nipple 0204-9020-535
16. Locking Gland 6700-0144-700
17. Threaded Locking Gland..... 6700-0142-700
18. DISS Male..... 0204-7989-535

* NOT to be used on the Posi-Pulse ISU. It must be mounted vertically.

10.4 North American

10.4.1 Regulator Options

Instructions: Select the adapter, vacuum regulator, and fitting to form an 11-digit part number.

Example: 6701-1251-901 =

6701 Diamond Adapter	**1251** Intermittent Suction Unit (ISU)	**901** Tubing Nipple

Adapters 67XX

No Adapter

6700
1/8" NPT
Female

6701
Ohmeda
Diamond

6702
Ohmeda
Hand-I-Twist

6703
DISS Nut &
Gland

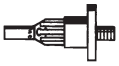
6704
Schrader

6705
NCG
Rectangle

6706
NCG Round

6707
Puritan-
Bennett

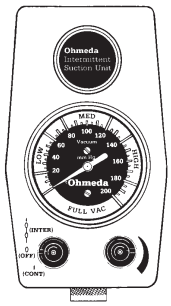
6708
OES



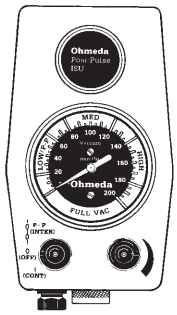
6709
MedStar

6711
90° Tubing
Nipple

Regulator 12XX



1251
Intermittent
Suction Unit (ISU)



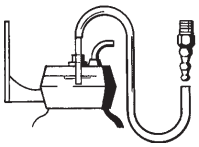
1252
Posi-Pulse ISU

Fittings 9XX

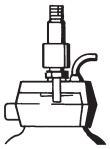
No Fitting

900
1/8" NPT Female

901
Tubing Nipple

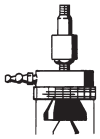


902
Tubing Nipple and
1/2 Gallon Bottle,
with Wall Slide
(Straight)

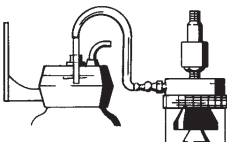


903
Locking Gland and
1/2 Gallon Bottle,
with Floor Bracket

904
Locking Gland

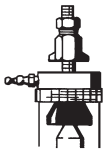


905
Locking Gland and
Overflow Safety Trap

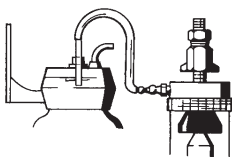


906
Locking Gland and
Overflow Safety Trap
and 1/2 Gallon Bottle,
with Wall Slide (Straight)

907
DISS Male



908
DISS Male & Overflow
Safety Trap, DISS Wing
Nut & Gland



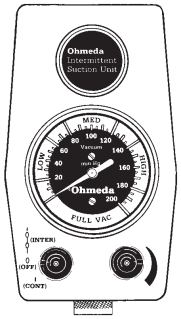
909
DISS Male, Overflow
Safety Trap and 1/2
Gallon Bottle, with Wall
Slide (Straight)

10.4.2 Other Options (North American)

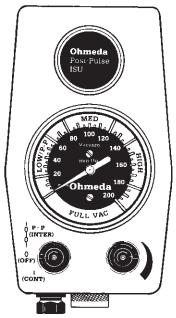
Instructions: Select the desired configuration and write down the first four and the last three digits of the part number. Select the vacuum regulator desired (below) and insert the middle four digits in the "XXXX" section of the selected 11-digit part number.

Example: 6713-1251-907 = Intermittent Suction Unit with Rail Bracket and DISS Male fitting

Regulator 12XX



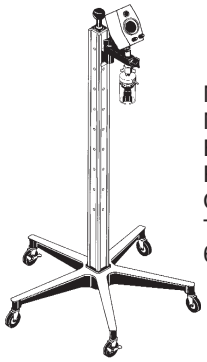
1251
Intermittent Suction Unit (ISU)



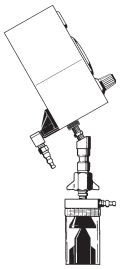
1252
Posi-Pulse ISU

1271
Pediatric ISU

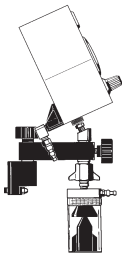
Options for Multi-Purpose Therapy Stand (MPTS) and Additional Accessories



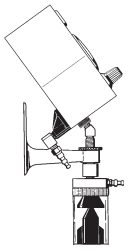
MPTS, Regulator, MPTS Slide Brackets (2) & Retaining Clips (2), Overflow Safety Trap
6711-XXXX-914*



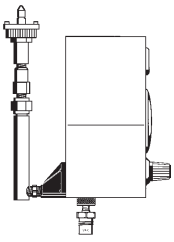
Regulator with 30° Fitting, Overflow Safety Trap
6711-XXXX-930*



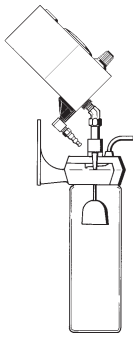
Regulator & MPTS (Slide) Bracket, Overflow Safety Trap
6711-XXXX-913*



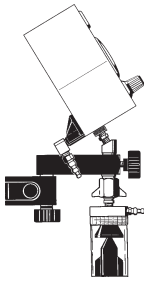
Regulator & MPTS (Slide) Bracket, Threaded Gland, 45° Fitting, Overflow Safety Trap
6711-XXXX-915*



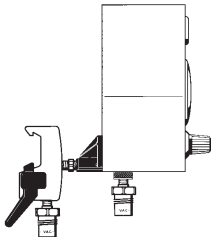
Regulator with Ceiling Mount, DISS Male
6712-XXXX-907



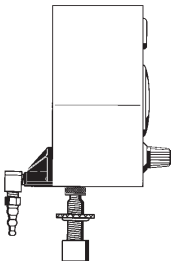
Regulator, Bracket, and 1/4 Gallon Bottle, 45° Locking Gland
6711-XXXX-916*



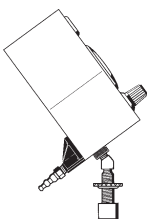
Regulator and Dovetail Bracket, Overflow Safety Trap
6711-XXXX-935*



Regulator & Rail Bracket, DISS Male
6713-XXXX-907



Regulator and Locking Gland (Threaded)
6711-XXXX-919



Regulator with 45° Locking Gland (Threaded)
6710-XXXX-910*

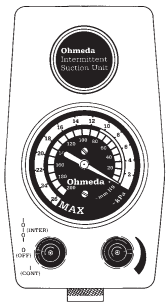
* 1252 Posi-Pulse ISU is not available in this configuration. It must be mounted vertically.

10.5 English Regulator Options

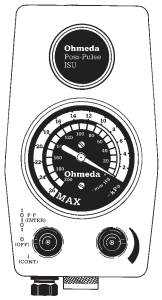
Instructions: Select the vacuum regulator and fittings to form an 11-digit part number.

Example: 6700-1253-901 = Intermittent Suction Unit (ISU) w/Tubing Nipple

Regulators
6700-12XX-9XX

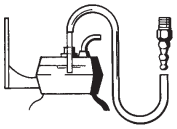
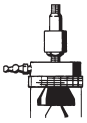
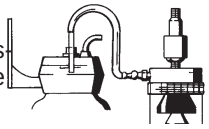
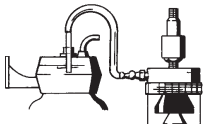
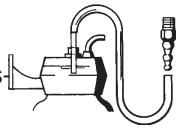


6700-1253-9XX
Intermittent Suction Unit (ISU)

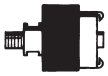
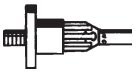


6700-1256-9XX
Posi-Pulse ISU

Inlet Fittings
6700-12XX-9XX

- 6700-12XX-900 w/o Inlet Fittings
- 6700-12XX-901 w/Tubing Nipple
- 6700-12XX-902 w/Tubing Nipple, 12" Tubing, 1/2 gal. Bottle, Cap & Float Assembly and Wall Slide (Straight) 
- 6700-12XX-904 w/Locking Gland
- 6700-12XX-905 w/Locking Gland and Overflow Safety Trap 
- 6700-12XX-906 w/Locking Gland, Overflow Safety Trap, 12" Tubing, 1/2 gal. Bottle, Cap & Float Assembly and Wall Slide (Straight) 
- 6700-12XX-911 w/Locking Gland, Overflow Safety Trap, 12"Tubing, 1/2 gal. Bottle, Cap & Float Assembly and Wall "V" Slide (International) 
- 6700-12XX-912 w/Tubing Nipple, 12" Tubing, 1/2 gal. Bottle, Cap & Float Assembly and Wall "V" Slide (International) 

Probes

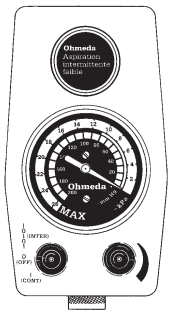
- 0221-2685-802 Diamond
- 0204-6717-800 Hand-I-Twist
- 0221-0205-800 NCG (Rectangle)
- 0221-0204-802 NCG (Round)
- 0221-0106-300 Puritan
- 6700-0051-700 Drager
- 6700-0057-700 BOC IV
- 6700-0091-400 Air Liquide 
- 0221-0163-300 MedStar 
- 0204-9020-535 Tubing Nipple
- 0221-0152-300 OES
- 0221-0690-731 Schrader
- 6700-0094-700 DISS Nut & Gland
- 6700-0095-700 90° Tubing Nipple

10.6 French Regulator Options

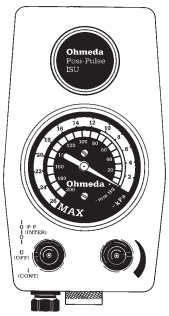
Instructions: Select the vacuum regulator and fittings to form an 11-digit part number.

Example: 6700-1254-901 = Intermittent Suction Unit (ISU) w/Tubing Nipple

Regulators
6700-12XX-9XX

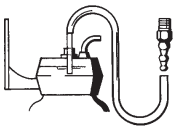
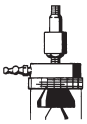
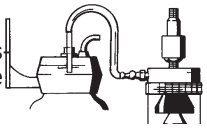
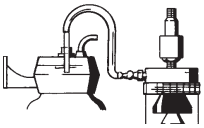
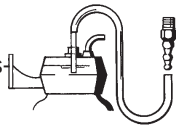


6700-1254-9XX
Intermittent Suction Unit (ISU)

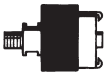
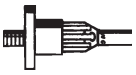


6700-1257-9XX
Posi-Pulse ISU

Inlet Fittings
6700-12XX-9XX

- 6700-12XX-900 w/o Inlet Fittings
- 6700-12XX-901 w/Tubing Nipple
- 6700-12XX-902 w/Tubing Nipple, 12" Tubing, 1/2 gal. Bottle, Cap & Float Assembly and Wall Slide (Straight) 
- 6700-12XX-904 w/Locking Gland
- 6700-12XX-905 w/Locking Gland and Overflow Safety Trap 
- 6700-12XX-906 w/Locking Gland, Overflow Safety Trap, 12" Tubing, 1/2 gal. Bottle, Cap & Float Assembly and Wall Slide (Straight) 
- 6700-12XX-911 w/Locking Gland, Overflow Safety Trap, 12"Tubing, 1/2 gal. Bottle, Cap & Float Assembly and Wall "V" Slide (International) 
- 6700-12XX-912 w/Tubing Nipple, 12" Tubing, 1/2 gal. Bottle, Cap & Float Assembly and Wall "V" Slide (International) 

Probes

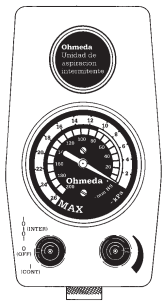
- 0221-2685-802 Diamond
- 0204-6717-800 Hand-I-Twist
- 0221-0205-800 NCG (Rectangle)
- 0221-0204-802 NCG (Round)
- 0221-0106-300 Puritan
- 6700-0051-700 Drager
- 6700-0057-700 BOC IV
- 6700-0091-400 Air Liquide 
- 0221-0163-300 MedStar 
- 0204-9020-535 Tubing Nipple
- 0221-0152-300 OES
- 0221-0690-731 Schrader
- 6700-0094-700 DISS Nut & Gland
- 6700-0095-700 90° Tubing Nipple

10.7 Spanish Regulator Options

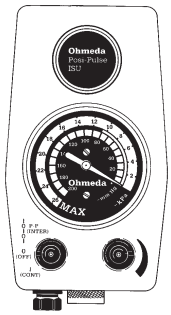
Instructions: Select the vacuum regulator and fittings to form an 11-digit part number.

Example: 6700-1255-901 = Intermittent Suction Unit (ISU) w/Tubing Nipple

Regulators
6700-12XX-9XX

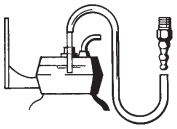
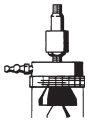
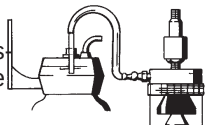
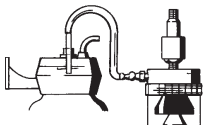
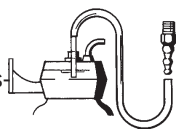


6700-1255-9XX
Intermittent Suction
Unit (ISU)

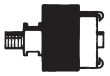
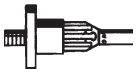


6700-1258-9XX
Posi-Pulse ISU

Inlet Fittings
6700-12XX-9XX

- 6700-12XX-900 w/o Inlet Fittings
- 6700-12XX-901 w/Tubing Nipple
- 6700-12XX-902 w/Tubing Nipple, 12" Tubing, 1/2 gal. Bottle, Cap & Float Assembly and Wall Slide (Straight) 
- 6700-12XX-904 w/Locking Gland
- 6700-12XX-905 w/Locking Gland and Overflow Safety Trap 
- 6700-12XX-906 w/Locking Gland, Overflow Safety Trap, 12" Tubing, 1/2 gal. Bottle, Cap & Float Assembly and Wall Slide (Straight) 
- 6700-12XX-911 w/Locking Gland, Overflow Safety Trap, 12"Tubing, 1/2 gal. Bottle, Cap & Float Assembly and Wall "V" Slide (International) 
- 6700-12XX-912 w/Tubing Nipple, 12" Tubing, 1/2 gal. Bottle, Cap & Float Assembly and Wall "V" Slide (International) 

Probes

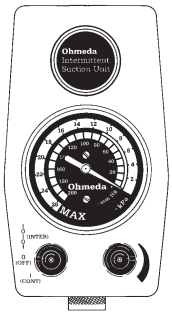
- 0221-2685-802 Diamond
- 0204-6717-800 Hand-I-Twist
- 0221-0205-800 NCG (Rectangle)
- 0221-0204-802 NCG (Round)
- 0221-0106-300 Puritan
- 6700-0051-700 Drager
- 6700-0057-700 BOC IV
- 6700-0091-400 Air Liquide 
- 0221-0163-300 MedStar 
- 0204-9020-535 Tubing Nipple
- 0221-0152-300 OES
- 0221-0690-731 Schrader
- 6700-0094-700 DISS Nut & Gland
- 6700-0095-700 90° Tubing Nipple

10.8 English, French and Spanish Other Options

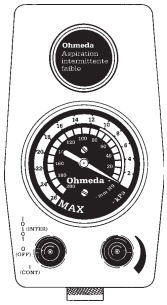
Instructions: Select the desired configuration and write down the first four and the last three digits of the part number. Select the vacuum regulator desired (below) and insert the middle four digits in the "XXXX" section of the selected 11-digit part number.

Example: 6711-1253-913 = Intermittent Suction Unit (English) with MPTS (Slide) Bracket and Overflow Safety Trap

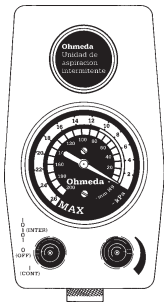
Regulator 12XX



1253
Intermittent Suction Unit (ISU) (English)

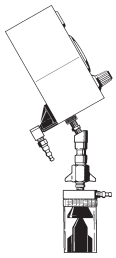


1254
Intermittent Suction Unit (ISU) (French)

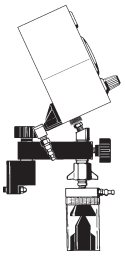


1255
Intermittent Suction Unit (ISU) (Spanish)

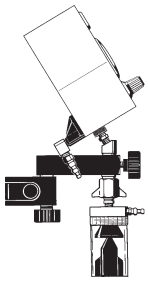
Options for Additional Accessories



Regulator with 30° Fitting, Overflow Safety Trap
6711-XXXX-930*



Regulator & MPTS (Slide) Bracket, Overflow Safety Trap
6711-XXXX-913*

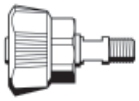


Regulator and Dovetail Bracket, Overflow Safety Trap
6711-XXXX-935*

* 1256, 1257, 1258 Posi-Pulse ISU is not available in this configuration. It must be mounted vertically.

10.9 Pediatric Intermittent Suction Unit (ISU) Ordering Ma-

Domestic Configurations



Adapter (Vacuum Source Connection)

Fittings (Patient Connection)		No Adapter w/1/8" NPT Female	Ohmeda Diamond	DISS Hand-I-Twist (HIT)	Chemetron Rectangle Striker (NCG)
No Fitting 1/8" NPT Female		6700-1271-900	6701-1271-900	6702-1271-900	6705-1271-900
Tubing Nipple		6700-1271-901	6701-1271-901	6702-1271-901	6705-1271-901
Locking Gland		6700-1271-904	6701-1271-904	6702-1271-904	6705-1271-904
Locking Gland and Overflow Safety Trap		6700-1271-905	6701-1271-905	6702-1271-905	6705-1271-905
DISS Male		6700-1271-907	6701-1271-907	6702-1271-907	6705-1271-907
DISS Male and Overflow Safety Trap, DISS wing nut & gland		6700-1271-908	6701-1271-908	6702-1271-908	6705-1271-908

International Configurations

	No Adapter w/1/8" NPT Female	BOC	DIN	AFNOR	AGA
No Fitting 1/8" NPT Female	6700-1273-900	6731-1273-900	6732-1273-900	6733-1273-900	6734-1273-900
Tubing Nipple	6700-1273-901	6731-1273-901	6732-1273-901	6733-1273-901	6734-1273-901
Locking Gland	6700-1273-904	6731-1273-904	6732-1273-904	6733-1273-904	6734-1273-904

Appendix

Installation procedure for Adapters/Probes and Fittings.

All adapters/probes and fittings should be sealed and installed properly to prevent leaks and to support the equipment when mounted. Both vacuum regulator ports are 1/8-27 NPTF tapered pipe threads. It is important to note that adapters/probes and fittings seal on the thread and may have threads exposed after they have been tightened properly.

Prior to installing the adapter/probe or fitting, seal the thread with [4]Teflon® (PTFE) tape or one of the following lubricants:

Dow® 111 (Ohio Medical P/N 6700-0074-200)

[5] Ball Vac-Kote (37951M) (Ohio Medical P/N 0220-0091-300)

⚠**CAUTION**: Do not use any Loctite® products to seal the threads (or products which contain Methacrylate Ester as an active ingredient).

The torque range for installing adapters/probes and fittings is 4.0 ft-lb (5.4 N-m) minimum to 10.0 ft-lb (13.6 N-m) maximum.

Adapters/probes and fittings which are not keyed for specific orientation, should be torqued to approximately 6.0 ft-lb (8.1 N-m).

Adapters/probes and fittings that are keyed to specific orientation, must be torqued initially to 4.0 ft-lbs. Additional torque is applied only until orientation is correct.

[4] Teflon is a registered trademark of the DuPont Company.

[5] Ball Vac-Kote is a registered trademark of the Ball Aerospace Systems Division.

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In the USA, please call Customer Service at 866-549-6446 for additional information or to place an order.

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